State of California
DEPARTMENT OF TRANSPORTATION

Business, Transportation and Housing Agency

Memorandum

File: 04-Son-12-PM 41.2/41.3
04-Son-121-PM 7.4/7.6
04-227-1A6201

From: DESIGN SHOPP SAFETY
Patrick Yip, PE

Subject: Master Files

1. U.S. Fish & Wildlife Service Biological Opinion, File #1-1-07-F-0360
2. U.S. Army Corps of Engineers 404 Certification Nationwide Permit #14, File #SPN-2007-00855-N
3. Storm Water Data Report Information Handout
4. CRWQCB permit agreement #: CIWQS Place No. 742491 (BT)

Approved Copy

United States Department of the Interior
FISH AND WILDLIFE SERVICE
Sacramento Fish and Wildlife Office
2800 Cottage Way, Room W-2605
Sacramento, California 95825-1846

In Reply Refer To:
1-1-07-F-0360

OCT -5 2007

Mr. James B. Richards
Attn: John Yeakel
California Department of Transportation
111 Grand Avenue
P.O. Box 23660
Oakland, California 94623

Subject: Biological Opinion on the Effects of the Proposed Traffic Signal Installation and Road Realignment Safety Project at the Junction of State Routes 12 and 121 in the City of Schellville, Sonoma County, California (EA 1A6200) on the Threatened California Red-Legged Frog.

Dear Mr. Richards:

This is in response to your April 18, 2006, request for informal consultation with the U.S. Fish and Wildlife Service (Service) on the proposed Traffic Signal Installation and Road Realignment Safety Project at the Junction of State Routes 12 and 121 in the Sonoma County, California. A draft biological opinion was issued on August 17, 2007, to which the California Department of Transportation (Caltrans) responded to with requested revisions on September 24, 2007. The proposed project primarily consists of installing traffic signals and realigning the eastbound approach of State Route 12 at the junction with State Route 121. The Service is concerned about the effect of the proposed action on the threatened California red-legged frog (*Rana aurora draytonii*). This document represents the Service's biological opinion on the effects of the action on the listed animal. This document is issued under the authority of the Endangered Species Act of 1973, as amended (16 U.S.C. 1531 *et seq.*) (Act).

This biological opinion is based on: (1) the *Initial Site Assessment and Biological Evaluation for California Red-Legged Frog for the Traffic Signal Installation and Road Realignment Safety Project (EA 1A6200)* dated April 2006; (2) the July 3, 2007, Caltrans response to a request for additional information; (3) electronic mail and telephone conversations between Caltrans and the Service; and (4) other information available to the Service.

CONSULTATION HISTORY

April 18, 2006	Caltrans sent the Service a request for concurrence on their determination that the proposed Traffic Signal Installation and Road Realignment Safety Project at the Junction of State Routes 12 and 121 will have no effect on the California red-legged frog.
June 30, 2006	The Service received the *Initial Site Assessment and Biological Evaluation for California Red-Legged Frog for the Traffic Signal Installation and Road Realignment Safety Project (EA 1A6200)* from Caltrans.
September 25, 2006	The Service issued Caltrans a request for additional information in order to complete consultation. The request included but was not limited to additional information regarding an assessment for the endangered California freshwater shrimp (*Syncaris pacifica*); a more detailed project description; and the inclusion of California red-legged frog avoidance and conservation measures.
June 30, 2006	The Service received a request from Caltrans for a written response to the June 30, 2006, Initial Site Assessment outlining the protocol survey requirements for the project or what, if any, further information is needed to facilitate a determination regarding California red-legged frog habitat in the project area and associated protocol survey requirements.
January 16, 2007	The Service sent an electronic mail message to Caltrans explaining that additional information was needed to complete their Initial Site Assessment for the California red-legged frog.
January 30, 2007	The Service sent an electronic mail message to Caltrans explaining that a response to the September 25, 2006, request for additional information was necessary for determination as to whether California red-legged frog protocol surveys would be necessary.
January 31, 2007	The Service sent an electronic message to Caltrans regarding likely California red-legged frog aquatic habitat in the proposed project area.
February 7, 2007	The Service received an electronic mail message from John Yeakel of Caltrans regarding the January 31, 2007, electronic mail message and a February 1, 2007, phone conversation with the Service regarding protocol California red-legged frog surveys and formal consultation for the California red-legged frog.

March 15, 2007	The Service received a request from Caltrans for a written response to June 30, 2006, Initial Site Assessment outlining the protocol survey requirements for the project or what, if any, further information is needed to facilitate a determination regarding California red-legged frog habitat in the project area and associated protocol survey requirements.
May 3, 2007	The Service received an electronic mail message from Caltrans requesting a response as to whether protocol-level California red-legged frog surveys would be necessary for the project. Caltrans stated that the response would be needed before they could submit their response to the Service's September 25, 2006, request for additional information.
May 3, 2007	In response to the May 3, 2007, Caltrans electronic mail message, the Service sent Caltrans an electronic mail message informing them California red-legged frog protocol surveys would not be necessary because of the strong likelihood that the species is present in the vicinity of the action area. The Service also requested that Caltrans provide the response to the September 25, 2006, request for additional information to in order for consultation to proceed.
May 3, 2007	The Service received an electronic mail message from Caltrans requesting the Service issue a letter stating that it was not necessary to conduct California red-legged frog protocol surveys in association with the proposed project.
July 3, 2007	The Service discussed the proposed project with Caltrans via telephone. The Service requested the response to the September 25, 2006, request for additional information.
July 5, 2007	The Service received the *Caltrans Response to September 25, 2006 Comments from the United States Fish and Wildlife Service for the Road Realignment and Traffic Signal Installation Project, Schellville* from Caltrans via electronic mail. The response was dated July 3, 2007.
August 17, 2007	The Service sent Caltrans a draft biological opinion (1-1-07-I-1371) for the proposed project.
September 24, 2007	Caltrans provided requested revisions to the draft biological opinion via an electronic mail message.

BIOLOGICAL OPINION

Description of Proposed Action

According to the Caltrans July 3, 2007 response to comments, Caltrans proposes to install a traffic signal and realign the eastbound approach of State Route 12 at the junction of State Route 12, (postmile [PM] 41.3-41.4/kilopost [KP] 66.5-66.6) and State Route 121 (PM 7.4-7.6/KP 11.9-12.2) in eastern Sonoma County. According to Caltrans the purpose of the project is to improve public safety at this junction by reducing traffic accidents and improving the functionality of eastbound State Route 12, Fremont Road, and the junction of State Route 12 and 121.

Action Area

According to Caltrans, the project action area includes all construction access and staging areas (Caltrans 2007). The project action area contains the Shell-Vista Fire District buildings, associated landscaped areas and parking complexes, and a system of man-made flood control channels that run along the shoulders of State Route 12 and State Route 121, and on both sides of the Fire District complex. The flood control channel on the western end of the Fire District complex is a paved non-vegetated feature, which transects the project parcel. The project will not impact any of the surrounding roadside ditches or adjacent parcels.

Activity Phasing

Caltrans plans to complete the proposed project with the following construction stages:

1. Demolition of a portion of the existing roadbed of State Route 12;
2. Demolition of the old fire station building;
3. Filling of the existing concrete flood control channel located between the old and new fire stations;
4. Realignment of eastbound State Route 12 at the approach of the junction of State Route 12 and 121;
5. Construction of a left turn lane at the eastbound State Route 12 and northbound State Route 121 approaches;
6. Construction of shoulders at the junction;
7. Re-striping of Fremont Road into a one-way road connecting southbound State Route 121 to westbound State Route 12; and
8. Installation of signals at the junction of State Route 12 and State Route 121.

All construction activities are scheduled to occur during the dry season, between March 1 and October 31. Up to 30 of these working days will include night work during the phase of construction in which State Route 12 and State Route 121 are joined. Some construction site preparation activities, including tree removal near the old firehouse, may take place outside of this time period. Site preparation measures will include installation of environmentally sensitive area plastic fencing bounded along the bottom with silt fencing along the south side of State Route 121. The environmentally sensitive area fencing will serve as a boundary around the project action area in order to restrict access by vehicles, work activities, and personnel into the adjacent floodplain area.

3/1 to 10/31
8 mo
30 night works

Pre-construction Activities

According to Caltrans, pre-construction activities near the junction of State Route 12 and State Route 121 will require demolishing an old firehouse within the intersection; removing landscape trees, three redwood trees (*Sequoia sempervirens*) and three pine trees (*Pinus* species) in front of the old firehouse; and demolishing a segment of the State Route 12 alignment (Caltrans 2007). Construction equipment staging will occur in the paved area adjacent to the existing firehouse and on the paved portion of State Route 12 that will be demolished and realigned, depending on construction stage. Access to the construction areas will occur from existing roadbeds on Fremont Road, State Route 12, and State Route 121. Construction equipment will not leave the roadway into the surrounding environments.

Tree removal

The old firehouse will be demolished using a bulldozer and an excavator. The redwood and pine trees located in front of it will be removed prior to construction of the new alignment and signal installation. All vegetation removal will occur between September 1 and February 15 to comply with the Migratory Bird Treaty Act (MBTA) by avoiding impacts to nesting birds. Otherwise, a biologist will perform pre-construction surveys for active bird nests.

Removal Vegetation
9/1 to 2/15

The demolition of the segment of State Route 12 will take place from the road using a road ripper. This breaks up and processes the asphalt, and piles it within its old alignment.

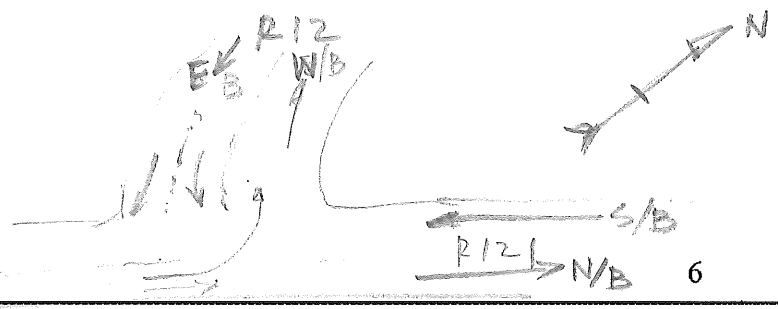
No dewatering activities are anticipated and no impacts will be made to the roadside ditches in the project area.

Construction Activities

According to Caltrans the project construction activities will include:

1. Installation of fully traffic-actuated signals at the junction of State Route 12 and State Route 121;

2. Realignment of eastbound State Route 12 at the approach of the junction of State Route 12 and 121;



3. Construction of a left turn lane at eastbound State Route 12 and northbound State Route 121 approaches;

4. Construction of paved shoulders on the southbound side of State Route 121, between Fremont Road and State Route 12;

5. Re-striping of Fremont Road into a one-way road connecting southbound State Route 121 to westbound State Route 12; and

6. Filling of the existing concrete channel located between the old and new fire stations. The roadside flood control drainage will not be affected by the project.

Equipment

Caltrans expects the construction contractor will use the following equipment. Vegetation will be removed with hand tools. After that, the site of the new ditch alignment will be grubbed. Grubbing typically involves the use of dozers, mulchers, and dump trucks to remove tree or shrub stumps within the proposed work areas. Dozers and excavators will likely be used for general grading and contouring of the new road alignment and the new shoulder alignment. Rollers are then used to compact the soil and water trucks are used to aid soil compaction and dust control. Dumptrucks, graders, pavers, and rollers are used to lay the road base and asphalt. Construction equipment will not leave the roadway or enter the surrounding environments, except for on designated areas.

Avoidance and Conservation Measures

Caltrans proposes the following measures to avoid and minimize effects to listed species:

"No Const." 11/1 to 2/28

1. For seasonal avoidance of the California red-legged frog, construction will not occur from November 1 through February 28 to the extent practicable. If any work remains to be completed after November 1, exclusionary fencing will be placed in those areas where construction needs to be completed. Exclusionary fencing will consist of taut silt fabric, 24 inches in height, tacked at 10 foot intervals, with the bottom buried 6 inches below grade. Exclusionary fencing will be maintained so that it is intact during rain events and 24 hours after any rain event.

2. Erosion control measures shall be utilized throughout all phases of operation where sediment runoff from exposed slopes threatens to enter waters of the State. At no time shall silt-laden runoff be allowed to enter the stream or be placed where it may enter the stream.

3. No equipment will be operated in live stream channels.

4. Service-approved biologist(s) will be designated for the project. The biologist(s) must be able to accurately identify the California red-legged frog. The qualifications of the biologist(s) will be presented to the Service for review and written approval at least 30 calendar days prior to ground-breaking at the project site. This biologist(s) will be on-site during all activities that may result in the take of the California red-legged frog. Only the approved biologist(s) shall capture or handle California red-legged frogs at the project site. The biologist(s) will be given the authority, through the Resident Engineer to stop any work that may result in take of any listed species. If the biologist(s) exercises this authority, the Service and the California Department of Fish and Game will be notified by telephone and electronic mail within one working day. The Service contact will be Chris Nagano, Deputy Assistant Field Supervisor, Endangered Species Program at the Sacramento Fish and Wildlife Office at telephone 916/414-6600 or by email at Chris_Nagano@fws.gov.

5. The Service-approved biologist(s) will survey the construction site for California red-legged frogs during the following specific periods: one time prior to initial groundbreaking activities; daily, during the initial ground disturbing phase of construction; daily during rainy periods; and periodically during the remaining times.

6. The Service-approved biologist(s) will survey the entire construction site prior to construction to determine if the California red-legged frog is present. Surveys may also be conducted following ground disturbance in the initial phase of construction. The surveys performed after the initial pre-construction survey will be only for those portions of the project site that are: (1) subject to direct construction activities; and (2) staging activities. If a California red-legged frog is observed during an inspection, the animal shall be either moved to a safe nearby location or allowed to leave on its own volition.

7. The on-site biologist(s) shall ensure precautions are implemented to prevent introduction of amphibian diseases to the action area by using the recommended equipment decontamination procedures within the Service's California Red-Legged Frog Survey Guidance. This item is available at the Service's Sacramento office website http://www.fws.gov/sacramento/es/protocol.htm. Disinfecting equipment and clothing is especially important when biologists are coming to the action area to handle frogs after working in other aquatic habitats.

8. An employee education program on the California red-legged frog shall be conducted prior to the date of initial groundbreaking at the project. The program should consist of a brief presentation by the Service-approved on-site biologist to explain endangered species concerns to all contractors, their employees, and agency personnel involved in the project. The program should include a description of the California red-legged frog and its habitat; an explanation of the status of this species and their protection under the Endangered Species Act, associated consequences of noncompliance with federal and state permits; and a description of the measures being taken to reduce effects to this

species during project construction and implementation. An outline of the training program shall be submitted to the Service. The original sign-in sheets for the training shall be submitted to the Service within thirty (30) calendar days after the date of the class.

9. To minimize temporary disturbances to the listed species, all project-related vehicle traffic shall be restricted to established roads, construction areas, and other designated areas. These areas also should be included in pre-construction surveys and, to the maximum extent possible, should be established in locations disturbed by previous activities to prevent or minimize adverse effects.

10. The construction areas shall be delineated with high visibility temporary fencing at least 4 feet (1 .2 meters) in height, flagging, or other barrier to prevent encroachment of construction personnel and equipment onto any sensitive areas during project work activities. Such fencing shall be inspected and maintained daily by the Service-approved biologist(s) until completion of the project. The fencing will be removed only when all construction equipment is removed from the site. No project activities shall occur outside the delineated project construction area.

11. No equipment or supply storage shall occur within listed species habitat, other than that designated in the project description.

12. To prevent inadvertent entrapment of species during construction, all excavated, steep-walled holes or trenches more than 2 feet (0.6 meters) deep shall be covered at the close of each working day by plywood or similar materials, or provided with one or more escape ramps constructed of earth fill or wooden planks. Before such holes or trenches are filled, they must be thoroughly inspected by the Service-approved biologist(s) for trapped animals. If at any time a trapped listed animal is discovered, the Service-approved biologist(s) should immediately place escape ramps or other appropriate structures to allow the animal to escape, capture it by hand and move the animal(s) to an appropriate aquatic or upland location located within immediate walking distance outside of the work area, or the Service and/or California Department of Fish and Game shall be contacted by telephone for guidance. The Service and the California Department of Fish and Game shall be notified of the incident by telephone and electronic mail within twenty-four (24) hours by electronic mail and telephone.

13. Project-related vehicles shall observe a 20-mile (32-kilometer) per hour speed limit within construction areas, except on County roads, and State and Federal highways; this is particularly important at night when the CRLF is most active. Off-road traffic outside of designated project areas shall be prohibited.

14. To eliminate an attraction to predators of listed species all food-related trash items such as wrappers, cans, bottles, and food scraps shall be disposed of in closed containers and removed at the end of each working day from the entire project site.

15. To avoid injury or death to listed species, no firearms shall be allowed on the project site except for those carried by authorized security personnel, or local, State, or Federal law enforcement officials.

16. To prevent harassment, injury or mortality of listed species or destruction of burrows by dogs or cats, no canine or feline pets shall be permitted in the action area.

17. Plastic mono-filament netting (erosion control matting) or similar material shall not be used at the project site because listed species may become entangled or trapped in it. Acceptable substitutes include coconut coir matting or tackified hydroseeding compounds. This restriction shall be communicated to the contractor through use of special provisions included in the bid solicitation package.

18. Upon completion of the proposed action, all habitat subject to temporary ground disturbances, including storage and staging areas, temporary access, etc. must be re-contoured, if appropriate, and revegetated with seeds and/or cuttings of appropriate plant species to promote restoration of the area to pre-project conditions. An area subject to "temporary" disturbance means any area that is disturbed during the project, but that after project completion will not be subject to further disturbance and has the potential to be revegetated. Caltrans shall submit their draft proposal for the restoration and revegetation plan to the Service at least thirty (30) calendar days prior to the date of initial ground breaking; the final plan shall be submitted for approval by the Service and the California Department of Fish and Game prior to the date of initial ground breaking at the proposed project. To the maximum extent practicable (i.e., presence of natural lands), topsoil shall be removed, cached, and returned to the site according to successful restoration protocols. Loss of soil from run-off or erosion shall be prevented with straw bales, straw wattles, or similar means provided they do not entangle, block escape or dispersal routes of listed animal species. The Service-approved biologist(s) shall ensure that areas subject to temporary disturbance have been adequately restored. This information shall be included under the final reports described in the Terms and Conditions of this biological opinion.

19. The written authorization of the Service and the California Department of Fish and Game shall be obtained by Caltrans prior to transporting California red-legged frog beyond immediate walking distance of the action area (i.e., individuals shall not be moved to laboratories, holding facilities, or other facilities without the written authorization of the Service and the California Department of Fish and Game).

20. If requested, before, during, or upon completion of ground breaking and construction activities, Caltrans shall allow access by Service and/or California Department of Fish and Game personnel to the project site to inspect project effects to listed species and their habitats.

21. Caltrans shall submit a post-construction compliance report prepared by the on-site biologist to the Sacramento Fish and Wildlife Office within sixty (60) calendar days following project completion or within sixty (60) calendar days of any break in construction activity lasting more than sixty (60) calendar days. This report shall detail (i) dates that construction occurred; (ii) pertinent information concerning the success of the project in meeting compensation and other conservation measures; (iii) an explanation of failure to meet such measures, if any; (iv) known project effects on the California red-legged frog, if any; (v) occurrences of incidental take of the California red-legged frog; (vi) documentation of employee environmental education; and (vii) other pertinent information. The reports shall be addressed to the Deputy Assistant Field Supervisor of the Endangered Species Program, Sacramento Fish and Wildlife Office.

22. Caltrans shall report to the Service and the California Department of Fish and Game any information about take or suspected take of listed wildlife species not authorized by this biological opinion within twenty-four (24) hours of receiving such information. Notification must include the date, time, location of the incident or of the finding of a dead or injured animal, and photographs of the specific animal. The individual animal shall be preserved, as appropriate, and held in a secure location until instructions are received from the Service regarding the disposition of the specimen or the Service takes custody of the specimen.

23. Service or California Department of Fish and Game personnel or its agents may inspect the work site at any time.

Status of Species/Environmental Baseline

California Red-Legged Frog

The red-legged frog was listed as a threatened species on May 23, 1996 (Service 1996). Please refer to the final rule and the *Recovery Plan for the California Red-Legged Frog (Rana aurora draytonii)* (Service 2002) for additional information on this species.

This species is the largest native frog in the western United States (Wright and Wright 1949), ranging from 1.5 to 5.1 inches (3.81 to 12.95 centimeters) in length (Stebbins 2003). The abdomen and hind legs of adults are largely red, while the back is characterized by small black flecks and larger irregular dark blotches with indistinct outlines on a brown, gray, olive, or reddish background. The California red-legged frog has dorsal spots that usually have lighter centers (Stebbins 2003) and they also have distinctive dorsolateral folds that start near the eye

and run the length of their body. Larvae (tadpoles) range from 0.6 to 3.1 inches (1.52 to 7.87 centimeters) in length, with a dark brown body with yellow with darker spots (Storer 1925). Red-legged frogs have paired vocal sacs and vocalize in air (Hayes and Krempels 1986).

Red-legged frogs typically breed from November through March, although there are earlier breeding records reported for the southern localities (Storer 1925). Individuals occurring in coastal drainages are active year-round (Jennings *et al.* 1992), whereas those found in interior sites are normally less active during the cold season. Female frogs deposit egg masses on emergent vegetation, allowing the eggs to float on the surface of the water (Hayes and Miyamoto 1984).

The historic range of the red-legged frog once extended coastally from the vicinity of Elk Creek in Mendocino County, California, and inland from the vicinity of Redding, Shasta County, California, southward to northwestern Baja California, Mexico (Fellers 2005; Jennings and Hayes 1985; Hayes and Krempels 1986). The red-legged frog was historically documented in 46 counties but the taxa is now thought to remain in 238 streams or drainages within 23 counties. This represents a loss of approximately 70 percent of its former range (Service 2002). Red-legged frogs are still locally, and relatively, abundant within portions of the San Francisco Bay area and the Central Coast. Within the remaining distribution of the species, only isolated populations have been documented in the Sierra Nevada, northern Coast, and northern Transverse ranges. The species is believed to be extirpated from the southern Transverse and Peninsular ranges, but is still present in Baja California, Mexico (CDFG 2007).

Adult red-legged frogs prefer dense, shrubby or emergent riparian vegetation, closely associated with deep (>2.3 feet [0.7 meters]), still, or slow-moving water (Hayes and Jennings 1988). However, this species also have been found in ephemeral creeks and drainages and in ponds that may or may not have associated riparian vegetation. The largest densities of red-legged frogs are currently associated with deep pools with dense stands of overhanging willows (*Salix* species) and an intermixed fringe of cattails (*Typha latifolia*) (Jennings 1988). Red-legged frogs disperse upstream and downstream of their breeding habitat to forage and seek sheltering habitat.

According to Feller and Kleeman (2007), non-breeding dry season habitat includes several characteristics: 1) sufficient moisture to allow the frogs to survive throughout the non-breeding season that may be up to 11 months long ; 2) sufficient cover to moderate temperatures during the warmest and coldest times of the year; and 3) protection (e.g., deep pools in a stream, or complex cover such as root masses or thick vegetation) from predators such as hawks and owls, herons, and small carnivores.

During other parts of the year, California red-legged frog habitat includes nearly any area that stays moist and cool through the summer within 1-2 miles (1.6-3.2 kilometers) of a breeding site (Fellers 2005). According to Fellers (2005), this can include vegetated areas with coyote bush (*Baccharis pilularis*), California blackberry thickets (*Rubus ursinus*), and root masses associated with willow (*Salix* species) and California bay trees (*Umbellularis californica*). Sometimes the

non-breeding habitat used by red-legged frogs is extremely limited in size. For example, non-breeding red-legged frogs have been found in a 6-foot (1.8-meter) wide coyote bush thicket growing along a tiny intermittent creek surrounded by heavily grazed grassland (Fellers 2005). Sheltering habitat for red-legged frogs is potentially all aquatic, riparian, and upland areas within the range of the species. This includes any landscape features that provide cover, such as existing animal burrows, boulders or rocks, organic debris such as downed trees or logs, and industrial debris. Sheltering red-legged frogs have also been found in agricultural features such as drains, watering troughs, spring boxes, abandoned sheds, or hay stacks. Incised stream channels sections narrower and deeper than 18 inches (45.7 centimeters) also may provide important summer sheltering habitat. Accessibility to sheltering habitat is essential for the survival of red-legged frogs within a watershed, and can be a factor limiting frog population numbers and survival.

Red-legged frogs do not have a distinct breeding migration (Fellers 2005). Adult frogs are often associated with permanent bodies of water. Some frogs remain at breeding sites all year while others disperse. Dispersal distances are typically less than 0.5 mile (0.8 kilometers), however some individuals have been known to move up to 2 miles (3.2 kilometers) (Fellers 2005). Movements are typically along riparian corridors, but some individuals, especially on rainy nights, move directly from one site to another through normally inhospitable habitats, such as heavily grazed pastures or oak-grassland savannas (Fellers 2005). In one study, dispersing frogs in northern Santa Cruz County were found to travel distances from 0.25 miles (0.4 kilometers) to more than 2 miles (3.2 kilometers) without apparent regard to topography, vegetation type, or riparian corridors (Bulger *et al.* 2003). Fellers and Kleeman (2007) and Bulger et al. (2003) found that California red-legged frog migration corridors can be less "pristine" (e.g., closely grazed fields, plowed agricultural lands) than breeding or non-breeding habitats. Bulger et al. (2003) observed that this listed ranid did not avoid or prefer any landscape feature or vegetation type. They tracked individuals that crossed agricultural land, including recently tilled fields and areas with mature crops. The threats facing migrating California red-legged frogs during their movements include being run over by vehicles on roads (Gibbs 1998; Vos and Chardon 1998), degradation of habitat (Vos and Stumpel 1995; Findlay and Houlahan 1997; Gibbs 1998), predation (Gibbs 1998), and desiccation (Rothermel and Semlistch 2002; Mazerolle and Desrochers 2003).

Egg masses typically consist of 2,000 to 5,000 moderate sized (0.08 to 0.11 inches [0.2 to 0.3 centimeters] in diameter), dark reddish-brown eggs and are typically attached to vertical emergent vegetation, such as bulrushes (*Scirpus* species) or cattails (Jennings *et al.* 1992). Red-legged frogs are often prolific breeders, and typically lay their eggs during or shortly after large rainfall events in late winter and early spring (Hayes and Miyamoto 1984). Eggs typically hatch in 6 to 14 days (Jennings 1988). In coastal lagoons, the most significant mortality factor in the pre-hatching stage is water salinity (Jennings *et al.* 1992). Exposure to salinity levels greater than 4.5 parts per thousand results in 100 percent egg mortality (Jennings and Hayes 1990). Increased siltation during the breeding season can cause asphyxiation of eggs and small larvae. Larvae undergo metamorphosis 3.5 to 7 months after hatching (Storer 1925; Wright and Wright

1949; Jennings and Hayes 1990). Of the various life stages, larvae probably experience the highest mortality rates, with less than 1 percent of eggs laid reaching metamorphosis (Jennings *et al.* 1992). Sexual maturity normally is reached at 3 to 4 years of age (Storer 1925; Jennings and Hayes 1985). Red-legged frogs may live 8 to 10 years (Jennings *et al.* 1992). Populations of red-legged frogs fluctuate from year to year. When conditions are favorable red-legged frogs can experience extremely high rates of reproduction and thus produce large numbers of dispersing young, as well as a concomitant increase in the number of occupied sites. In contrast, red-legged frogs may temporarily disappear from an area when conditions are stressful (*e.g.*, drought).

The diet of red-legged frogs is highly variable. Hayes and Tennant (1985) found invertebrates to be the most common food items. According to their data, vertebrates, such as Pacific tree frogs (*Pseudacris regilla*) and California mice (*Peromyscus californicus*) represented over half the prey mass eaten by larger frogs (Hayes and Tennant 1985). Hayes and Tennant (1985) found juvenile frogs to be active diurnally and nocturnally, whereas adult frogs were largely nocturnal. Feeding activity probably occurs primarily along the shoreline and on the surface of the water (Hayes and Tennant 1985). The diet of red-legged frogs is not well studied, but their diet is likely similar to other ranid frogs that feed on algae, diatoms, and detritus by grazing on the surface of rocks and vegetation (Fellers 2005; Kupferberg 1996a, 1996b).

Several researchers in central California have noted the decline and eventual disappearance of red-legged frog populations once bullfrogs (*Rana catesbeiana*) became established at the same site (L. Hunt, in litt. 1993; S. Barry, in litt. 1992; S. Sweet, in litt. 1993). This has been attributed to predation, competition, and reproduction interference. Twedt (1993) documented bullfrog predation of juvenile northern red-legged frogs (*Rana aurora aurora*), and suggested that bullfrogs could prey on subadult northern red-legged frogs as well. Bullfrogs may also have a competitive advantage over red-legged frogs. For instance, bullfrogs are larger and possess more generalized food habits (Bury and Whelan 1984). In addition, bullfrogs have an extended breeding season (Storer 1933) during which an individual female can produce as many as 20,000 eggs (Emlen 1977). Further more, bullfrog larvae are unpalatable to predatory fish (Kruse and Francis 1977). Bullfrogs also interfere with red-legged frog reproduction. Both California and northern red-legged frogs have been observed in amplexus (mounted on) with both male and female bullfrogs (Jennings and Hayes 1990; Twedt 1993; M. Jennings, in litt.1993; R. Stebbins in litt. 1993). Thus bullfrogs are able to prey upon and out-compete red-legged frogs, especially in sub-optimal habitat. Other species such as red swamp crayfish (*Procambarus clarkii*), signal crayfish (*Pacifastacus leniusculus*), and several species of warm water fish including sunfish (*Lepomis* species), goldfish (*Carassius auratus*), common carp (*Cyprinus carpio*), and mosquitofish may also contribute to the decline of red-legged frog populations (L. Hunt, in litt. 1993; S. Barry, in litt. 1992; S. Sweet, in litt. 1993).

The urbanization of land within and adjacent to red-legged frog habitat has also adversely affected red-legged frogs. These declines are attributed to channelization of riparian areas, enclosure of the channels by urban development that blocks red-legged frog dispersal, conversion and isolation of perennial pool habitats, and the introduction of predatory fishes and bullfrogs.

The California red-legged frog may be susceptible to many of the same pathogens, fungi, water mold, bacteria, and viruses have been known to adversely other amphibian species. Chytridiomycosis and ranaviruses may be a particular developing concern for California red-legged frog populations. Mao *et al.* (1999 cited in Fellers 2005) reported northern red-legged frogs infected with an iridovirus, which was also present in sympatric three-spined sticklebacks (*Gasterosteus aculeatus*) in northwestern California. Ingles (1932a, 1932b, and 1933 cited in Fellers 2005) reported four species of trematodes from red-legged frogs, but he later synonymized two of them (found them to be the same as the other two). Nonnative species, such as bullfrogs, are located within the range of the California red-legged frog and have been identified as potential carriers of these diseases. Human activities can facilitate the spread of disease by encouraging the further introduction of non-native carriers and by acting as carriers themselves (i.e. contaminated boots or fishing equipment). Human activities can also introduce stress by other means, such as habitat fragmentation, that results in red-legged frogs being more susceptible to the effects of disease. Disease will likely become a growing threat because of the relatively small, fragmented remaining California red-legged frog breeding sites; the many stresses on these sites due to habitat losses and alterations; and the many other potential disease-enhancing anthropogenic changes which have occurred both inside and outside the species' range.

The recovery plan for red-legged frogs identifies eight Recovery Units (Service 2002). The establishment of these Recovery Units is based on the Recovery Team's determination that various regional areas of the species' range are essential to its survival and recovery. The status of the red-legged frog will be considered within the smaller scale of Recovery Units as opposed to the overall range. These Recovery Units are delineated by major watershed boundaries as defined by U.S. Geological Survey hydrologic units and the limits of the range of the California red-legged frog. The goal of the draft recovery plan is to protect the long-term viability of all extant populations within each Recovery Unit. The Proposed Traffic Signal Installation and Road Realignment Safety Project at the Junction of State Routes 12 and 121 Project is within Recovery Unit 3 (North Coast and North San Francisco Bay) for the California red-legged frog (Service 2002).

The project vicinity is subject to seasonal flooding and there is a great variety of aquatic features immediately adjacent to the action area including Sonoma Creek, Fowler Creek, road-side ditches, a flood control basin, and stock ponds. In their July 2007 response, Caltrans stated that California red-legged frogs may use the adjacent floodplain for dispersal and that the listed frog may also use the adjacent segment of Sonoma Creek for dispersal and breeding. A California red-legged frog was observed in Champlin Creek by a Caltrans biologist in August 2004 (Morton 2004). Champlin Creek is a tributary to Sonoma Creek and the 2004 observation was approximately 3 miles (4.8 kilometers) west of the action area. There are no obvious barriers to frog movement along the length of Champlin Creek to Sonoma Creek or Fowler Creek. This is the only California red-legged frog observation from Champlin Creek that has been reported to the California Natural Diversity Database, suggesting that the general vicinity has not been subject to extensive past biological evaluation (CDFG 2007). The CNDDB includes another

California red-legged frog observation approximately 600 feet (183 meters) from the Champlin Creek observation (Cook 2002). This observation was made by biologist, Dave Cook, in May 2002 at an ephemeral leachate pond within a landfill site. Therefore the Service concludes that California red-legged frogs using the aquatic features immediately adjacent to the action area are likely to occur within the action area during dispersal and when moving between surrounding habitat areas. Based on the biology and ecology of the species, this listed amphibian is likely the California red-legged frog forages, rests, moves through, and conducts other essential behaviors within the action area.

Effects of the Proposed Action

The proposed Traffic Signal Installation and Road Realignment Safety Project at the Junction of State Routes 12 and 121 likely will result in a number of adverse effects to the California red-legged frog throughout the 9.0 acre triangular action area defined by State Route 12 (Broadway), State Route 121 (Carneros Highway), and Fremont Drive. There is a likelihood that the animals may be affected by being crushed; entombed in their cover sites; hit and injured or killed by vehicle strikes; shot; chased and injured or killed by domestic animals; poisoned by chemical agents; trapped in erosion control netting; or harassed by noise and vibration. The proposed project may also adversely affect the California red-legged frog by blocking movement corridors; interfering with foraging, mating, and/or movement; or by subjecting them to predation that otherwise would not occur. It is likely this listed animal disperses through the action area and inhabits the surrounding vicinity (for purposes of this biological opinion the surrounding vicinity is described as 1,000 feet [304.8 meters] outside and adjacent to the project footprint), and that they are likely to be subject to indirect effects including, pesticide or chemical poisoning, an influx of exotic predators, increased competition, the intrusion of non-native plants, disease, and a reduction in natural food sources as a result of local disturbance.

However, given the proximity of Sonoma Creek, Fowler Creek, drainage ditches, and agricultural ponds adjacent to the action area, as well as a history of local seasonal flooding, it is likely that this listed species can be encountered in a number of locations while moving between these habitats. There are no impassable physical barriers that would exclude this species from moving between these habitat types. The California red-legged frog may use a wide variety of habitat types for activities such as foraging and dispersal. Furthermore, this species may seek retreat in other areas when displaced by activity or disturbance within more traditionally associated habitat. Therefore, the proposed action could affect the California red-legged frog throughout the action area.

Individual California red-legged frogs may be directly injured, killed, harmed, and harassed by activities that disturb dispersal habitat. The proposed project is not expected to result in the loss of habitat for this listed species. However, the proposed project could (1) result in construction related harassment, including effects from lights used during nighttime activities, to the surviving red-legged frogs on the site; (2) impede the dispersal of red-legged frogs through the site while

the action is in progress; (3) increase the likelihood of predation and the introduction of amphibian disease; and (4) fragment red-legged frog habitat.

Changes in light level may disrupt orientation in nocturnal animals. The range of anatomical adaptations to allow night vision is broad (Park 1940), and rapid increases in light can blind animals. For frogs, a quick increase in illumination causes a reduction in visual capability from which the recovery time may be minutes to hours (Buchanan 1993). After becoming adjusted to a light, frogs may be attracted to it as well (Jaeger and Hailman 1973). Laboratory experiments have demonstrated that dark-adapted frog species exposed to rapid increases in illumination may be temporarily "blinded" and unable to gather visual information on prey, predators, or conspecifics until their eyes adapt to the new illumination. Foraging may be facilitated in frog species that hunt around lights because the ambient illumination is increased to a level that allows the frogs to see prey or because lights attract relatively larger numbers of insects and other invertebrate prey. Experiments and anecdotal evidence indicates that both temporary and permanent changes to the night time illumination of an area may affect the reproduction, foraging, predator avoidance, and social interactions of frog species (Buchanan 2002). Artificial lighting may alter reproductive behaviors by inhibiting frog species that normally only reproduce at very low illuminations. For instance, female Tungara frogs (*Physalaemus pustulosus*) are less selective about mate choice when light levels are increased, evidently preferring to mate quickly and avoid the increased predation risk of mating activity (Rand *et al.* 1997). Longcore and Rich (2004) reported that frogs in an experimental enclosure stopped mating activity during night football games, when lights from a nearby stadium increased sky glow. Mating choruses only resumes when the enclosure was covered to shield the frogs from light. Increased illumination may allow predators to see frogs they otherwise would be unable to detect. Circadian rhythms, activity patterns, and intra-specific visual communication also may be affected by increased illuminations.

Individual frogs dispersing through the action area may experience harassment from increased human activity and run the risk of being crushed or buried by earth moving activities. Night-time construction and the associated lighting may increase predation because frogs will lose the cover of darkness. Construction activities will likely impede the movement of adult frogs from unspecified breeding habitat to summer habitat, and visa versa. Temporary loss of dispersal habitat for the project duration increases intra-and inter-specific competition for food and living space for red-legged frogs in the action area vicinity.

Roads have been documented as barriers to movements by a diversity of species, and this effect varies with road size and traffic volume. Most of the available data is associated with large mammals such as mountain lions (*Felis concolor*) (Van Dyke *et al.* 1986) and black bears (*Ursus americanus*) (Brody and Pelton 1989). Amphibians, such as the California red-legged frog likely process and relate to their environment and perception of potential threats in much different ways than large mammals and other more well-studied taxa. Therefore, although red-legged frogs may exhibit less reluctance to cross a road than a lynx (*Lynx lynx*) (Barnum 1999), roads pose an increased risk of mortality for many species. Furthermore, traffic frequency and road expansion

likely corresponds with increased mortality, decreased gene flow, and increased fragmentation of habitats and populations (Joly and Morand 1997).

Roads were found to be significant barriers to gene flow among common frogs (*Rana temporaria*) in Germany and have resulted in genetic differentiation among populations separated by roads (Reh and Seitz 1990). Similarly, significant genetic subdivision was detected in bank voles (*Clethrionomys glarelous*) populations separated by a 164 foot (50-meter) wide highway in Germany (Gerlach and Musolf 2000). In California, local extirpations of mountain lions has occurred when roads and other development fragmented habitat into small patches and blocked movement corridors, thereby isolating the patches and preventing recolonization (Beier 1993). Adequately sized culverts or undercrossings, with suitable habitat at each side of the passage, significantly increases the ability of animals to cross highways (Ng *et al.* 2004).

California red-legged frog mortality and injury occurs when the animals attempt to cross roads and are hit by cars, trucks, or motorcycles. The majority of strikes likely occur on rainy nights when the animals are most active. Driver visibility is also lower at night and in inclement weather, increasing the potential for strikes. Such strikes are usually fatal for an animal the size of a red-legged frog. Thus, vehicle strikes are a direct source of mortality for this listed amphibian. If vehicle strikes are sufficiently frequent in a given locality, they could result in reduced California red-legged frog abundance. The death of animals during the breeding season could result in reduced reproductive success.

The local and range-wide effects of vehicle strikes on California red-legged frogs have not been adequately assessed. Vehicle strikes appear to occur most frequently where roads transverse areas where the animals are abundant. However, the linear quantity of roads in a given area may not be directly related to the number of associated vehicle strikes, as has been shown in San Joaquin kit fox (*Vulpes macrotis mutica*) studies (Cypher *et al.* 2000; U.S. Department of Energy 1993; Spiegel and Disney 1996; Ralls and White 1995). The type of road (*e.g.*, number of lanes), traffic volume, and average speed of vehicles likely all influence the number of California red-legged frog/vehicle strikes. The number of strikes likely increases with road size, traffic volume, and average speed (Clevenger and Waltho 1999). Another factor influencing the number of vehicles striking this threatened amphibian, but for which little data is available, is the frequency with which the animals cross roads and are therefore at risk. The proportion of successful road crossings by these animals likely declines with increasing road size, traffic volume and density, and vehicle speeds. It is unlikely that California red-legged frogs are able to become more successful in crossing roads with increased experience.

Vehicle-related mortality has significantly affected other listed or rare species. Vehicles caused 49 percent of the mortality documented among endangered Florida panthers (*Felis concolor coryi*) (Maehr *et al.* 1991). With a small remaining population, the loss of any individuals to vehicles could constitute a significant population effect. Similarly, at least 15 percent of the remaining 250-300 key deer (*Odocileus virginianus clavium*) are killed annually by vehicles (Tubak 1999), and this mortality is considered to be a limiting factor in the recovery of this

endangered species (Service 1985). Mortality from vehicles was the primary source of mortality for endangered ocelots (*Felis pardalis*) in Texas (Tubak 1999), and also contributed to the failure of a lynx reintroduction project in New York (Aubrey *et al.* 1999). Rudolph *et al.* (1999) estimated that road-associated mortality may have depressed populations of Louisiana pine snakes (*Pituophis ruthveni*) and timber rattlesnakes (*Crotalus horridus*) by over 50 percent in eastern Texas, and this mortality may be a primary factor in local extirpations of timber rattlesnakes (Rudolph *et al.* 1998). Mortality from vehicles is also contributing to the reduction in the status of the prairie garter snake (*Thamnophis radix radix*) in Ohio (Dalrymple and Reichenbach 1984), and was a limiting factor in the recovery of the endangered American crocodile (*Crocodylus acutus*) in Florida (Kushland 1988). In Florida, threatened Florida scrub-jays (*Aphelocoma coerulescens*) suffered higher mortality in territories near roads, as well as reduced productivity due to vehicle strikes of both young and breeding adults (Mumme *et al.* 1999).

The presence of roads in an area could result in the local introduction of chemical contaminants. Contaminants could be introduced in several ways. Substances used in road building materials or to recondition roads can leach out or wash off roads into adjacent habitat. Vehicle exhaust emissions include hazardous substances which may become concentrated in road-side soils. Heavy metals such as lead, aluminum, iron, cadmium, copper, manganese, titanium, nickel, zinc, and boron are all emitted in vehicle exhaust (Trombulak and Frissell 2000). Concentrations of organic pollutants (e.g., dioxins, polychlorinated biphenyls) are higher in soils along roads (Benfenati *et al.* 1992) and ozone levels are higher in the air near roads (Trombulak and Frissell 2000). Vehicles may leak hazardous substances such as motor oil and antifreeze. Although the quantity leaked by a given vehicle may be minute, these substances can accumulate on roads and then get washed into the adjacent environment by storm water runoff. An immense variety of substances could be introduced during accidental materials spills. Such spills can result from small containers falling off passing vehicles to large material spills from traffic accidents. Depending on the substance, large spills may be partially or completely mitigated with clean-up efforts.

California red-legged frogs could be exposed to contaminants if using habitat adjacent to roads or downstream of associated stormwater runoff. Exposure pathways could include inhalation, dermal contact, direct ingestion, ingestion of contaminated soil or plants, or consumption of contaminated prey. Exposure to contaminants could cause short- or long-term morbidity, possibly resulting in reduced productivity or mortality. Carcinogenic substances could cause genetic damage resulting in sterility, reduced productivity, or reduced fitness among progeny. Contaminants may also have a negative effect on red-legged frog prey species. This could result in reduced prey abundance and diminished local carrying capacity for the red-legged frog.

Construction of roads can facilitate the invasion and establishment of non-native species. Disturbance and alteration of habitat adjacent to roads may create favorable conditions for non-native plants and animals. These exotic species can spread along roadsides and then into adjacent habitat. Modified road-side habitat may be more conducive to the dispersal of non-

native species into red-legged frog habitat. Non-native wildlife could compete with red-legged frogs for resources such as food, or cause direct injury or frog mortality. Non-native plants and animals may also reduce habitat quality for the listed amphibian or their prey, and reduce the productivity or the local carrying capacity for the threatened species. As has been shown for San Joaquin kit foxes, introductions of non-native species could cause California red-legged frogs to alter behavioral patterns by avoiding or abandoning areas near roads (Cypher 2000).

Negative effects to wildlife populations from roads may extend some distance from the actual road. The phenomenon can result from any of the effects already described in this biological opinion (*e.g.*, vehicle-related mortality, habitat degradation, invasive exotic species, *etc.*). Forman and Deblinger (1998) described the area affected as the "road effect" zone. Along a 4-lane road in Massachusetts, they determined that this zone extend for an average of approximately 980 feet (298.7 meters) to either side of the road for an average total zone width of approximately 1970 feet (600.5 meters). However, in places they detected an effect greater than 0.6 mile (1.0 kilometers) from the road. Rudolph *et al.* (1999) detected reduced snake abundance up to 2790 feet (850.4 meters) from roads in Texas. Extrapolating to a landscape scale, they concluded that roads likely have a significant effect on Texas snake populations, given that approximately 79 percent of the state is within 1640 feet (499.9 meters) of a road "road-zone" effects can be subtle. Van der Zandt *et al.* (1980) reported that lapwings (*Vanellus vanellus*) and black-tailed godwits (*Limosa limosa*) feeding at 1575-6560 feet (480-2000 meters) from roads were disturbed by passing vehicles. The heart rate, metabolic rate and energy expenditure of female bighorn sheep (*Ovis canadensis*) increases near roads (MacArthur *et al.* 1979). Trombulak and Frossell (2000) described another type of "road-zone' effect. Heavy metal concentrations from vehicle exhaust were greatest within 66 feet (20 meters) of roads, and elevated levels of metals in both soil and plants were found at least 660 feet (201 meters) of roads. The "road-zone" apparently varies with habitat type and traffic volume. Based on bird responses, Forman and Alexander (2000) estimated primary road zones of 1,000 feet (305 meters) in woodlands, 1,197 feet (365 meters) in grasslands, and 2657 feet (810 meters) in natural lands near urban areas. The effect zone was 656 feet (200 meters) along secondary roads with lower traffic volumes.

Various other work activities associated with the proposed project also may adversely affect California red-legged frogs. Trash left during or after project activities could attract predators to work sites, which could subsequently harass or prey on the animals. For example, raccoons, crows, and ravens are attracted to trash and also prey opportunistically on amphibians. Construction equipment that has been used in different areas and with different species of amphibians, including the California red-legged frog, may transmit diseases by introducing contaminated soil and other foreign material brought in by equipment. There is also a possibility that people working on the site, particularly the onsite biologists could introduce amphibian disease to habitat used by California red-legged frogs. Recently, the probability of encountering and spreading a disease to previously unaffected amphibian populations has dramatically increased throughout the United States. It is possible that chytrid fungus may exacerbate the effects of other diseases on amphibians or increase the sensitivity of the amphibian to

environmental changes (e.g., water pH) that reduce normal immune response capabilities (Bosch *et al.* 2000).

Cumulative Effects

Cumulative effects include the effects of future State, Tribal, local, or private actions that are reasonably certain to occur in the action area considered in this biological opinion. Future Federal actions that are unrelated to the proposed action are not considered in this section because they require separate consultation pursuant to section 7 of the Act.

Numerous non-Federal activities continue to negatively affect the California-red-legged frog in the Bay Area. Habitats are lost or degraded as a result of road and utility construction and maintenance, overgrazing, agricultural expansion, and water irrigation and storage projects that may not be funded, permitted, or constructed by a Federal agency. Other threats include contamination, poisoning, increased predation, and competition from non-native species associated with human development. Small private actions that may adversely affect listed species, such as conversion of land, small mamal population control, mosquito control, and residential development, may occur without consultation without authorization by the Service or the California Department of Fish and Game pursuant to their respectively Endangered Species Acts.

According to Draft Sonoma County General Plan 2020, the population of Sonoma County is projected to increase from 458,614 in 2000 to 546,030 residents in 2020; an increase of 87,416 residents (Sonoma County 2006). The draft general plan also projects the number of housing units in Sonoma County to increase by 38,487 housing units during this same time period. This growth will be accompanied by the expansion of public services and infrastructure needed to service the growing population. There will likely be many other development projects that occur during this timeframe due to increases in human population growth that will continue to imperil the California red-legged frog.

Sonoma County is within the Bay Area and the population within the nine counties that define the Bay Area is expected to increase from 6,783,762 in 2000 to increase by 18 percent to approximately 8,014,000 in the year 2020 (Sonoma County 2006). Sonoma County is expected to represent 1.8 percent of that population.

Throughout the Bay Area, there is a continued demand for new commercial, housing, and recreation opportunities. Considering this, the remaining agricultural, grazing, and undeveloped land adjacent to the State Route 12 and 121 in Sonoma County is likely threatened by increased activity and habitat loss due to road, residential, and commercial development. The development of adjacent wildlife habitat will continue to result in the loss of not only breeding, resting, and foraging habitat, but the loss of dispersal corridors between breeding populations, thereby further isolating and fragmenting wildlife populations. Additionally, potential development of small reservoirs or water bodies, such as golf course hazards, and water diversions may pose further

threats such as disruption of dispersal corridors for terrestrial species, and competition or predation from non-native species such as bullfrogs for aquatic species.

As urban development continues, it will likely adversely affect upland areas that serve as dispersal and aestivation habitat for the California red-legged frog. Continued development and maintenance of roadways to serve expanding urban areas may further fragment and isolate populations from other nearby populations. Increased predation associated with domesticated pets or feral animals generally accompanies urban expansion. As urban development encroaches on rural areas, the need increases for mosquito abatement programs that may introduce exotic fish into ponds used for breeding by California red-legged frogs, thus impacting the reproductive success of this listed species.

Cattle grazing is a common land use practice in rural Sonoma County. Overgrazing results in degradation and loss of riparian vegetation, increased water temperatures, streambank and upland erosion, and decreased water quality in streams. Livestock operations may also degrade water quality with pesticides and nutrient contamination. However, light to moderate livestock grazing is generally thought to be compatible with continued successful use of rangelands by the California red-legged frog and other listed species, provided the grazed areas do not also have intensive burrowing rodent control efforts (T. Jones, in litt. 1993; Shaffer *et al.* 1993). The shorter vegetation associated with grazed areas may make the habitat more suitable for ground squirrels whose burrows are utilized by the California red-legged frog. Rodent control in rural areas in Sonoma County could contribute to the decline of the California red-legged frogs in the region, as well as other sensitive species that utilize burrows created by burrowing rodents.

Agricultural development, impoundments, and irrigation can reduce stream flows, resulting in the loss of aquatic habitat during the summer for red-legged frogs. Disking is a common practice on agricultural lands which can result in substantial losses of upland habitat for the California red-legged frog. Significant conversion of rural, undeveloped land to agricultural land, particularly in vineyards, is currently in Sonoma County, resulting in loss of upland habitat for listed species.

California red-legged frogs likely are exposed to a variety of pesticides and other chemicals throughout their ranges. This amphibian species could also die from starvation due to the loss of their prey base. In addition, red-legged frogs may be harmed through increased road kill due to the construction and use of new roads and increased traffic in the overall region and collection-by amphibian enthusiast and others.

Increased access to aquatic habitat due to urbanization and associated road construction and improvements could facilitate or increase the spread of amphibian diseases within the range of the California red-legged frog. The global mass extinction of amplibians primarily due to chytrid fiulgus continues to be of significant concern (Norris 2007; Skerratt *et al.* 2007).

The global average temperature has risen by approximately 0.6 degrees Centigrade during the 20th Century (IFPC 2001, 2007; Adger *et al*. 2007). There is an international scientific consensus that most of the warning observed has been caused by human activities (IFPC 2001, 2007; Adger et al. 2007), and that it is "very likely" that it is largely due to manmade emissions of carbon dioxide and other greenhouse gases (Adger et al. 2007). Ongoing climate change (Anonymous 2007; Inkley *et al*. 2004; Adger et al. 2007; Kanter 2007) likely imperils the California red-legged frog, and the resources necessary for their survival. Since climate change threatens to disrupt annual weather patterns, it may result in a loss of their habitats and/or prey, and/or increased numbers of their predators, parasites, and diseases. Where populations are isolated, a changing climate may result in local extinction, with range shifts precluded by lack of habitat.

Conclusion

After reviewing the current status of the California red-legged frog; the environmental baseline for the action area; the effects of the proposed action and the cumulative effects, it is the Service's biological opinion that the proposed Traffic Signal Installation and Road Realignment Safety Project at the Junction of State Routes 12 and 121 is not likely to jeopardize the continued existence of this listed species. Critical habitat for the California red-legged frog has been designated, but does not occur in the action area, and therefore will not be affected by the proposed project.

INCIDENTAL TAKE STATEMENT

Section 9 of the Act and Federal regulation pursuant to section 4(d) of the Act prohibit the take of endangered and threatened species, respectively, without special exemption. Take is defined as harass, harm, pursue, hunt, shoot, wound, kill, trap, capture or collect, or to attempt to engage in any such conduct. Harass is defined by the Service as an intentional or negligent act or omission which creates the likelihood of injury to a listed species by annoying it to such an extent as to significantly disrupt normal behavioral patterns which include, but are not limited to, breeding, feeding, or sheltering. Harm is defined by the Service to include significant habitat modification or degradation that results in death or injury to listed species by impairing behavioral patterns including breeding, feeding, or sheltering. Incidental take is defined as take that is incidental to, and not the purpose of, the carrying out of an otherwise lawful activity. Under the terms of section 7(b)(4) and section 7(o)(2), taking that is incidental to and not intended as part of the agency action is not considered to be prohibited taking under the Act provided that such taking is in compliance with this incidental take statement.

The measures described below are non-discretionary, and Caltrans must ensure that they become binding conditions of project authorization for the exemption under 7(o)(2) to apply. Caltrans has a continuing duty to regulate the activity that is covered by this incidental take statement. If Caltrans (1) fails to adhere to the terms and conditions of the incidental take statement through

enforceable terms, and/or (2) fails to retain oversight to ensure compliance with these terms and conditions, the protective coverage of 7(o)(2) may lapse.

Amount or Extent of Take

The Service anticipates that incidental take of the California red-legged frog will be difficult to detect because when this amphibian is not in their breeding ponds, it inhabits rodent burrows or inconspicuous cover sites, or may be difficult to locate due to their cryptic appearance and behavior; the sub-adult and adult animals may be located a distance from the breeding ponds; the migrations occur on a limited period during rainy nights in the fall, winter, or spring; and the finding of an injured or dead individual is unlikely because of their relatively small body size. Losses of this species may also be difficult to quantify due to seasonal fluctuations in their numbers, random environmental events, changes in water regime at their breeding ponds, or additional environmental disturbances. Therefore, the Service is estimating that all California red-legged frogs found in the 9.0 acre triangular action area defined by State Route 12 (Broadway), State Route 121 (Carneros Highway), and Fremont Drive will be subject to incidental take. Upon implementation of the Reasonable and Prudent Measures, incidental take associated with the proposed Traffic Signal Installation and Road Realignment Safety Project at the Junction of State Routes 12 and 121 in the form of harm and harassment, and capture of the California red-legged frog caused by construction activities will become exempt from the prohibitions described under section 9 of the Act.

Effect of the Take

In the accompanying biological opinion, the Service determined that this level of anticipated take is not likely to result in jeopardy to the California red-legged frog. Critical habitat has been designated for the California red-legged frog, however none is located in the action area, and therefore none will be affected by the proposed project.

Reasonable and Prudent Measures

The following reasonable and prudent measures are necessary and appropriate to minimize the effects of the proposed Traffic Signal Installation and Road Realignment Safety Project at the Junction of State Routes 12 and 121 on the California red-legged frog:

1. Caltrans will implement the project as described in the June 2006 Biological Evaluation, the July 2007 response to comments, and this biological opinion.

2. Minimize effects to the California red-legged frog.

3. Caltrans shall ensure their compliance with this biological opinion.

Terms and Conditions

In order to be exempt from the prohibitions of section 9 of the Act, Caltrans shall ensure compliance with the following terms and conditions, which implement the reasonable and prudent measures described above. These terms and conditions are nondiscretionary.

1. The following Terms and Conditions implement Reasonable and Prudent Measure one (1):

   a. Caltrans shall minimize the potential for harm, harassment, or killing of federally listed wildlife species resulting from project related activities by implementation of the conservation measures as described in the June 2006 Biological Evaluation, the July 2007 response to comments, and appearing in the Project Description of this biological opinion.

   b. Caltrans shall make the terms and conditions in this biological opinion a required term in all contracts for the project that are issued by them to all contractors.

2. The following Terms and Conditions implement Reasonable and Prudent Measure two (2):

   a. The Resident Engineer or their designee shall be responsible for implementing the conservation measures and Terms and Conditions of this biological opinion and shall be the point of contact for the project. The Resident Engineer or their designee shall maintain a copy of this biological opinion onsite whenever construction is taking place. Their name and telephone number shall be provided to the Service at least thirty (30) calendar days prior to groundbreaking at the project. Prior to ground breaking, the Resident Engineer must submit a letter to the Service verifying that they posses a copy of this biological opinion and have read the Terms and Conditions.

   b. Project employees shall be provided with written guidance governing vehicle use, speed limits on unpaved roads, fire prevention, and other hazards.

   c. Permanent disturbances and other types of project-related disturbance to the habitats of the California red-legged frog shall be minimized to the maximum extent practicable by Caltrans. To minimize disturbances, all project-related vehicle traffic shall be restricted to established roads, construction areas, and other designated areas. These areas also should be included in pre-construction surveys and, to the maximum extent possible, should be established in locations disturbed by previous activities to prevent further adverse effects.

   d. To prevent inadvertent entrapment of California red-legged frogs during construction, all excavated, steep-walled holes or trenches more than 2 feet (0.61 meters) deep shall

be covered at the close of each working day by plywood or similar materials, and provided with one or more escape ramps constructed of earth fill or wooden planks. Before such holes or trenches are filled, they must be thoroughly inspected for trapped animals. If at any time a trapped listed animal is discovered, the on-site biologist should immediately place escape ramps or other appropriate structures to allow the animal to escape, or the Service and/or California Department of Fish and Game shall be contacted by telephone for guidance. The Service shall be notified of the incident by telephone and electronic mail within one working day.

e. Only the Service-approved biologist(s) shall capture or handle California red-legged frogs at the project site. The Service and the California Department of Fish and Game shall be notified of any capture or sighting of the California red-legged frog by telephone and electronic mail within twenty-four (24) hours by electronic mail and telephone

f. All grindings and asphaltic-concrete waste shall be stored within previously disturbed areas absent of habitat and at a minimum of 150 feet (45.7 meters) from any culvert, or drainage feature.

g. Use of rodenticides and herbicides on the proposed Traffic Signal Installation and Road Realignment Safety Project at the Junction of State Routes 12 and 121 shall be utilized in such a manner to prevent primary or secondary poisoning of listed species, and depletion of prey populations on which they depend. All uses of such compounds shall observe label and other restrictions mandated by the U.S. Environmental Protection Agency, California Department of Pesticide Regulation, and other appropriate State and Federal regulations, as well as additional project-related restrictions deemed necessary by the Service or the California Department of Fish and Game.

h. The following Term and Condition shall be implemented should borrow sites be associated with the proposed Traffic Signal Installation and Road Realignment Safety Project at the Junction of State Routes 12 and 121:

    1. As part of the construction contract, Caltrans shall require that all contractors comply with the Act in the performance of work necessary for project completion inside and outside the project right-of-way.

    2. Caltrans shall require documentation from the contractor ensuring that aggregate, fill, or borrow material provided for the project was obtained in compliance with the Act. Evidence of compliance with the Act shall be demonstrated by providing the Resident Engineer any one of the following:
        i. a letter from the Service stating use of the borrow pit area will not result in the incidental take of listed species;

ii. an incidental take permit for contractor-related activities issued by the Service pursuant to section 10(a)(1)(B) of the Act;

iii. a biological opinion or a letter concurring with a "not likely to adversely affect" determination issued by the Service to the Federal agency having jurisdiction over contractor-related activities;

iv. letter from the Service concurring with the "no effect" determination for contractor-related activities; or

v. Contractor submittal of information to the Caltrans Resident Engineer indicating compliance with the State Mining and Reclamation Act (SMARA) and provide the County land use permits and California Quality Act (CEQA) clearance.

3. If a borrow site that is in compliance with the Act is not available, Caltrans shall either:

i. identify/select a site that the Service has concurred with the "no effect" determination, or;

ii. request reinitiation of formal consultation on the action considered herein based on new information.

B. The following Terms and Conditions implement Reasonable and Prudent Measure two (2):

1 Caltrans shall comply with the Reporting Requirements of this biological opinion.

Reporting Requirements

Injured California red-legged frogs must be cared for by a licensed veterinarian or other qualified person such as the on-site biologist; dead individuals of this listed species shall be placed in a zip-lock® plastic bag containing a piece of paper with the date, time, and location where the animal was found, and who found it written in permanent ink, and the placed in a freezer located in a secure location. The Service and the California Department of Fish and Game must be notified within one (1) working day of the discovery of death or injury to a California red-legged frog that occurs due to project related activities or is observed at the project site. Notification must include the date, time, and location of the incident or of the finding of a dead or injured animal clearly indicated on a USGS 7.5 minute quadrangle and other maps at a finer scale, as requested by the Service, and any other pertinent information. The Service contacts are Chris Nagano, Deputy Assistant Field Supervisor, Endangered Species Program at the Sacramento Fish and Wildlife Office (916) 414-6600, and Scott Heard, Resident Agent-in-Charge of the Service's

Law Enforcement Division at (916) 414-6660. The California Department of Fish and Game contact is Mr. Scott Wilson at (707) 944-5500.

Sightings of any listed or sensitive animal species shall be reported to the California Natural Diversity Database of the California Department of Fish and Game. A copy of the reporting form and a topographic map, clearly marked with the location the animals were observed, shall also be provided to the Service.

Caltrans shall submit a post-construction compliance report prepared by the on-site biologist to the Sacramento Fish and Wildlife Office within sixty (60) calendar days after the date of the completion of construction activity. This report shall detail (i) dates that construction occurred; (ii) pertinent information concerning the success of the project in meeting compensation and other conservation measures; (iii) an explanation of failure to meet such measures, if any; (iv) known project effects on the California red-legged frog, if any; (v) occurrences of incidental take of any of these listed species, if any; (vi) documentation of employee environmental education; and (vii) other pertinent information.

CONSERVATION RECOMMENDATIONS

Section 7(a) (1) of the Act directs Federal agencies to utilize their authorities to further the purposes of the Act by carrying out conservation programs for the benefit of endangered and threatened species. Conservation recommendations are discretionary agency activities to implement recovery actions, to help implement recovery plans, to develop information, or otherwise further the purposes of the Act.

The Service requests notification of the implementation of any conservation recommendations in order to be kept informed of actions minimizing or avoiding adverse effects or benefiting listed species or their habitats. We propose the following conservation recommendations:

1. Caltrans should assist the Service in implementing recovery actions identified in the *Recovery Plan for the California red-legged Frog* (Service 2002).

2. Caltrans should incorporate culverts, tunnels, or bridges on highways and other roadways that allow safe passage for the California red-legged frogs, other listed animals, and native wildlife. Caltrans should include photographs, plans, and other information in their biological assessments if they incorporate "wildlife friendly" crossings into their projects.

3. Caltrans should consider participating in the planning for a regional habitat conservation plan for the California red-legged frog, and other listed or otherwise special-status species.

4. Caltrans should consider establishing functioning preservation and creation conservation banking systems to further the conservation of the California red-legged frog and other appropriate species. Such banking systems also could be utilized for other required mitigation (i.e., seasonal wetlands, riparian habitats, *etc.*) where appropriate.

5. Caltrans should provide habitat for bats, including surfaces for bat roosts on the underside of bridges and other structures whenever possible.

REINITIATION - CLOSING STATEMENT

This concludes formal consultation on the proposed Traffic Signal Installation and Road Realignment Safety Project at the Junction of State Routes 12 and 121, in Sonoma County, California. As provided in 50 CFR §402.16, reinitiation of formal consultation is required where discretionary Federal agency involvement or control over the action has been maintained (or is authorized by law) and if: (1) the amount or extent of incidental take is exceeded; (2) new information reveals effects of the agency action that may affect listed species or critical habitat in a manner or to an extent not considered in this opinion; (3) the agency action is subsequently modified in a manner that causes an effect to the listed species or critical habitat that was not considered in this opinion; or (4) a new species is listed or critical habitat designated that may be affected by the action. In instances where the amount or extent of incidental take is exceeded, any operations causing such take must cease pending reinitiation.

If you have any questions regarding this biological opinion on the proposed Traffic Signal Installation and Road Realignment Safety Project at the Junction of State Routes 12 and 121, please contact John Cleckler or Chris Nagano at the letterhead address or at telephone (916) 414-6625.

Sincerely,

for Cay C. Goude
Acting Field Supervisor

cc:
Scott Wilson, California Department of Fish and Game, Yountville, California
Carl Wilcox, California Department of Fish and Game, Yountville, California
Scott Harris, California Department of Fish and Game, Yountville, California
Bill Cox, California Department of Fish and Game, Yountville, California
John Yeakel, California Department of Transportation, Oakland, California
Sarah Willbrand, California Department of Transportation, Oakland, California
Dale Jones, California Department of Transportation, Sacramento, California

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DEPARTMENT OF THE ARMY
SAN FRANCISCO DISTRICT, U.S. ARMY CORPS OF ENGINEERS
1455 MARKET STREET
SAN FRANCISCO, CALIFORNIA 94103-1398

JUL 27 2009

Regulatory Division

SUBJECT: File Number SPN-2007-00855-N

Ms. Sarah Willbrand
California Department of Transportation
Office of Biological Sciences & Permits
111 Grand Avenue
Oakland, California 94612

Dear Ms. Willbrand:

This letter is written in response to your submittal of June 17, 2009 concerning Department of the Army authorization to realign a segment of State Route 12 and widen State Route 121, at the intersection of State Routes 12 and 121, in the Town of Schellville, Sonoma County, California.

Based on a review of the information you submitted and an inspection of the project site conducted by Corps personnel on September 29. 2008, your project qualifies for authorization under Department of the Army Nationwide Permit 14 – Linear Transportation Projects (72 Fed. Reg. 11092, March 12, 2007), pursuant to Section 404 of the Clean Water Act (33 U.S.C. Section 1344). See Enclosure 1. All work shall be completed in accordance with the plan view and cross section drawings titled "Son – 12/121", dated 27 March 2009, in two sheets.

The project must be in compliance with the General Conditions cited in Enclosure 2 for this Nationwide Permit authorization to remain valid. Non-compliance with any condition could result in the suspension, modification or revocation of the authorization for your project, thereby requiring you to obtain an Individual Permit from the Corps. This Nationwide Permit authorization does not obviate the need to obtain other State or local approvals required by law.

This authorization will remain valid for two years from the date of this letter unless the Nationwide Permit is modified, suspended or revoked. If you have commenced work or are under contract to commence work prior to the suspension, or revocation of the Nationwide Permit and the project would not comply with the resulting Nationwide Permit authorization, you have twelve (12) months from that date to complete the project under the present terms and conditions of the Nationwide Permit. Upon completion of the project and all associated mitigation requirements, you shall sign and return the Certification of Compliance, Enclosure 3, verifying that you have complied with the terms and conditions of the permit.

This authorization will not be effective until you have obtained a Section 401 water quality certification from the San Francisco Bay Region Regional Water Quality Control Board (RWQCB). If the RWQCB fails to act on a valid request for certification within two (2) months after receipt of a complete application, the Corps will presume a waiver of water quality certification has been obtained. You shall submit a copy of the certification to the Corps prior to the commencement of work.

To ensure compliance with this Nationwide Permit authorization, the following special conditions shall be implemented:

1. This Corps permit does not authorize you to take an endangered species. In order to legally take a listed species, you must have a separate authorization under the Endangered Species Act (ESA) (e.g., an ESA Section 10 permit or a Biological Opinion (BO) under ESA Section 7 with "incidental take" provisions with which you must comply). The enclosed U.S. Fish and Wildlife Service (FWS) BO dated October 5, 2007 contains mandatory terms and conditions to implement the reasonable and prudent measures that are associated with "incidental take" that is also specified in the BO. Your authorization under this Corps permit is conditional upon your compliance with all of the mandatory terms and conditions associated with incidental take authorized by the attached BO, whose terms and conditions are incorporated by reference in this permit. Failure to comply with the terms and conditions associated with incidental take of the BO, where a take of the listed species occurs, would constitute an unauthorized take and it would also constitute non-compliance with this Corps permit. The FWS is the appropriate authority to determine compliance with the terms and conditions of its BO and with the ESA.

Should you have any questions regarding this matter, please call Philip Shannin of our Regulatory Division at 415-503-6781. Please address all correspondence to the Regulatory Division and refer to the File Number at the head of this letter. If you would like to provide comments on our permit review process, please complete the Customer Survey Form available online at http://per2.nwp.usace.army.mil/survey.html.

Sincerely,

Laurie Monarch
for

Jane M. Hicks
Chief, Regulatory Division

Enclosures

Dist-County-Route: 04-SON-12/121
Post Mile Limits: 41.3(SR 12) / 7.43 (SR121)
Project Type: Realignment
Project ID (or EA): 1A6201
Program Identification: 201.010
Phase: ☐ PID ☐ PA/ED ☒ PS&E

Regional Water Quality Control Board(s): San Francisco Bay, R-2

Is the Project required to consider Treatment BMPs? Yes ☐ No ☒
If yes, can Treatment BMPs be incorporated into the project? Yes ☐ No ☒
If No, a Technical Data Report must be submitted to the RWQCB at least 30 days prior to the projects RTL date. List RTL Date: _____

Total Disturbed Soil Area: 2.39 acres Risk Level: 2
Estimated: Construction Start Date: 05/01/2011 Construction Completion Date: 11/01/2012
Notification of Construction (NOC) Date to be submitted: 30 days prior to start of construction

Erosivity Waiver	Yes ☐	Date: _____	No ☒
Notification of ADL reuse (if Yes, provide date)	Yes ☐	Date: _____	No ☒
Separate Dewatering Permit (if yes, permit number)	Yes ☐	Permit # _____	No ☒

This Report has been prepared under the direction of the following Licensed Person. The Licensed Person attests to the technical information contained herein and the date upon which recommendations, conclusions, and decisions are based. Professional Engineer or Landscape Architect stamp required at PS&E.

Patrick Yip, Registered Project Engineer/Landscape Architect — Date: 11/19/2010

I have reviewed the stormwater quality design issues and find this report to be complete, current and accurate:

REGISTERED PROFESSIONAL ENGINEER
Patrick Yip
No. C44277
Exp. 6/30/2011
CIVIL
STATE OF CALIFORNIA

[Stamp Required for PS&E only)

Eric Shen, Project Manager — Date: 12/1/10

Bob Braga, Designated Maintenance Representative — Date: 12/8/10

David Yam, Designated Landscape Architect Representative — Date: 12/13/10

Valerie Ruggeberg, *District/Regional Design SW Coordinator or Designee* — Date: 12/13/10

STORM WATER DATA INFORMATION

1. Project Description

This project proposes to install traffic signalization and realignment of the approach on State Route (SR) 12 Post Mile (PM) 41.3 at the junction of SR 121, in Sonoma County. SR 12 currently merges onto SR 121 at a skewed angle, making it an unsafe junction. An old firemen house located on the southwest corner of the project area will be removed to accommodate the new roadway, and an existing culvert, conveying a waterway under one of the fire station's driveway, will be renovated and extended. Approximately 0.9acres (ac) of interlocking, open-celled articulated concrete block revetment will be placed alongside the roadway on SR 12 to prevent scour caused by flooding of the Sonoma Creek during the rainy season. Perennial grasses will be inserted in the voids of the revetment to create an environmentally beneficial and aesthetic enhancement to the area.

The total Disturbed Soil Area (DSA) has been estimated to be 2.39 ac. This quantity was calculated by adding areas of cut and fill, temporary construction easements, and all work and equipment disturbances anticipated for the project. The new impervious surface is calculated to be 0.833ac, and the removed impervious area will be 0.845ac; thus the net additional impervious area created will be –0.014ac.

The project limits are within the Sonoma County, which is identified as a Phase II Municipal Separate Storm Sewer System.

2. Site Data and Storm Water Quality Design Issues (refer to Checklists SW-1, SW-2, and SW-3)

This project is under the jurisdiction of the San Francisco Bay Regional Water Quality Control Board (RWQCB, R-2), within the San Pablo Hydrologic Unit, Sonoma Creek Hydrologic Area (HA) (#206.40). Sonoma Creek runs approximately 200 yards west of the project area and is listed in Section 303(d) of the Clean Water Act (CWA). The pollutants of concern are nutrients, pathogens, and sedimentation/siltation. The Total Maximum Daily Load (TMDL) has been completed for pathogens, but TMDLs for nutrients and sediment are still under development. No TMDLs have been adopted as amendments to the RWQCB's Basin Plan for implementation. The beneficial uses for Sonoma Creek are Cold Freshwater Habitat, Water Contact Recreation, Non-Contact Water Recreation, Spawning, Reproduction, and/or Early Development, Warm Freshwater Habitat, and Wildlife Habitat.

There are no water quality high-risk areas, no municipal or domestic water supply reservoirs, and no groundwater percolation facilities within the project limits.

There are no local agency requirements or concerns with regards to this project.

The project is located in a Mediterranean climate, characterized by warm, dry summers, and mild wet winters. The average temperatures range from ~ 45°F during the cool season to ~ 90°F during summer, and the average annual rainfall in the area is 32.7 in/yr, which primarily occurs between November and April. The topography consists of fairly flat alluvial plain, with the terrain gently sloping west to Sonoma Creek. The local land use is a mixture of residential and business.

Soils on this site are of Zamora silty clay loam type with a 0 to 2% slope, and a listed permeability of 0.2 to 0.63 inches per hour. Erosion hazard is slight to moderate. The groundwater is listed at approximately 2 feet of depth.

Aerially Deposited Lead (ADL) is not present within the project limits.

There are no Right-of-Way costs for this project for BMPs.

The new Construction General Permit that was issued by the State Water Resources Control Board (SWRCB) with order No. 2009-0009-DWQ requires that a water quality risk level determination to be conducted for each project. The risk level is determined by evaluating the project sediment risk and the receiving water risk. This project is determined to have a Risk Level 2. Projects with this risk level will be subject to Numeric Action Levels (NALs) and monitoring requirements as outlined by the new Construction General permit.

Measures for avoiding and reducing potential storm water impacts are discussed below in Sections 4 and 6. No known Permanent Treatment Best Management Practices (BMPs) currently exist within the project limits.

A 401 certification is required for this project since a Non-reporting Nationwide 14 (Linear Transportation Projects) permit under Section 404 from the Army Corps is required. Additionally, a Biological Opinion from the US Fish and Wildlife Services for the California red-legged frog is required.

3. Regional Water Quality Control Board Agreements

Within the San Francisco Bay Regional Water Quality Control Boards' jurisdiction, projects that require a 401 certification need to treat 100% of the net added impervious area for the project. Since the added impervious for this project is -0.014 ac, no treatment is being proposed.

Stormwater discharges from the State's Right-of Way, within the project area, are regulated by the Department's Statewide NPDES Storm Water Permit, issued by the State Water Resource Control Board (SWRCB) (Order No. 99-08-DWQ No. CAS000003). Additionally, discharges from construction activities within the project area are regulated by the revised "NPDES General Permit for Storm Water Discharges Associated with Construction and Land Disturbance Activities" (NPDES Number CAS000002), which was adopted on September 2, 2009, and is effective starting July 1, 2010.

4. Proposed Design Pollution Prevention BMPs to be used on the Project.

The volume of downstream flow is anticipated to be minimal, if any. The portion of the existing pavement that will be removed will offset the new pavement. Also, Design Pollution Prevention BMPs will be incorporated to minimize and dissipate velocity of downstream flow; these will include flared culvert end sections, outlet protection, and vegetated surfaces.

The potential for increased sediment loading at post-construction is unlikely due to the decrease in impervious area. During construction, Construction Site BMPs will be used to the maximum extent practicable to minimize or prevent any pollutants to make their way into Sonoma Creek.

There is currently an unlined ditch that runs parallel to SR 12 and crosses under the driveway of the fire station that will be realigned to follow the new roadway alignment; it will be lined with a geomembrane fabric to prevent any leakage from the nearby leach field; also, revetment will be installed above the fabric, then covered with 2 feet of soil, and lastly hydroseeded with perennial grasses.

Slope/Surface Protection Systems, Checklist DPP-1, Parts 1 and 3

The project will consist of fill at 4(H):1(V) or flatter. Permanent erosion control will be utilized in the form of compost blanket, hydroseed, and fiber rolls to all disturbed areas. Local topsoil will be

stockpiled and used again in the openings of the articulated concrete revetment, then compost blanket and hydroseed applied.

Concentrated Flow Conveyance Systems, Checklist DPP-1, Parts 1 and 4

The majority of the runoff is to sheet-flow off the roadway and infiltrate into ground, passing through the open cells of the revetment.

Preservation of Existing Vegetation, Checklist DPP-1, Parts 1 and 5

The project will be designed to minimize disturbance and to preserve any critical areas (wetlands, floodplains, problem soils and steep slopes). Where there is non-native vegetation, it will be removed and replaced with new landscaping better suited to the project area and treated with erosion control.

Areas of clearing and grubbing will be identified and defined in the contract plans. Any environmentally sensitive areas will de delineated on the plans to prevent disturbance by the construction of the project.

5. Proposed Permanent Treatment BMPs to be used on the Project

The added impervious for this project is -0.014 ac; therefore no treatment BMPs are being proposed.

6. Proposed Temporary Construction Site BMPs to be used on Project

Disturbed soil areas will be protected in accordance with the project's pollution control measures listed below and per the contract plans and specification. The construction site BMP strategy for this project will consist of soil stabilization measures, sediment control measures, tracking control measures, non-storm water management measures, and waste management and materials pollution control measures.

The following items considered for the project are included as separate bid line items in the Basic Engineering Estimating System (BEES) of the project:

- ***Storm Water Pollution Prevention Plan (SWPPP)*** This project involves disturbing more than 1 ac of soil; therefore a SWPPP will be prepared by the contractor and will identify Best Management Practices (BMPs) to reduce water quality impacts during construction. The SWPPP shall emphasize the following: 1) standard temporary erosion control measures to reduce sedimentation and turbidity of surface runoff from disturbed areas 2) personnel training 3) scheduling and implementation of BMPs throughout the various construction phases and during all seasons 4) identification of BMPs for non-storm water discharge, 5) mitigation and monitoring throughout the construction period, and 6) a rain event action plan, a storm water annual report, and storm water sampling and analysis.
- ***SSP 07-346-Construction Site Management:*** This non-storm water discharge and west management practice includes considerations for operations relating to construction activities including; paving and grinding operations, illicit connection/ illegal discharge detection and reporting, vehicle and equipment cleaning, vehicle and equipment fueling, vehicle and equipment maintenance, concrete curing and concrete finishing, solid west management, material delivery and storage, material use, stockpile management, concrete waste management, sanitary/septic waste management and liquid waste management.
- ***SSP 07-480-Temporary Construction Entrances*** limit the deposition of sediment on paved public roads at the entrance and exits of projects.

- ***SSP 07-406-Temporary Concrete Washout Bin*** prevents pollution by limiting the washout of concrete waste and wastewater to a specific location. Concrete washouts are used in the vicinity of areas where structure construction is proposed, including drainage structures.
- ***SSP 07-360-Street Sweeping*** used to control sediment, particulate matter, debris, and trash that may be tracked off site.
- ***SSP 07-420 Temporary Fiber Roll*** used to intercept runoff, reduce runoff flow velocity, and release the runoff as sheet flow; also used as a filter to remove sediment from runoff.
- ***SSP 07-430 Temporary Silt Fence*** Environmentally Sensitive Areas (ESAs) delineated on the plans will be protected with Temporary Fence (Type ESA)
- ***SSP 07-395 Temporary Cover*** Temporary Cover will be used on active disturbed soil areas that are particularly difficult to stabilize, especially stockpiles of soil.
- ***SSP 07-415 Temporary Check Dam*** constructed of rock or gravel bags placed across a natural or man-made channel or drainage ditch to reduce scour and channel erosion by reducing flow velocity and encouraging sediment to settle out.

This project has been identified as a Risk Level 2; therefore a Rain Event Action Plan (REAP) will be required when there is at least a 50% chance of precipitation, and Stormwater and Sampling Analysis will be required when there is at least 0.50 inches of precipitation. The monitoring locations will consist of two upstream control points, located at SR 12 (Sta 4+00) and SR 121 (Sta 14+50), and one downstream sampling point, located at SR121 (Sta 27+00).

Construction Site BMP strategy and associated quantities have been selected and calculated in coordination with the Office of Construction Support.

7. Maintenance BMPs (Drain Inlet Stenciling)

No stenciling is being proposed since there are no drain inlets within the project limits that are accessible to pedestrians.

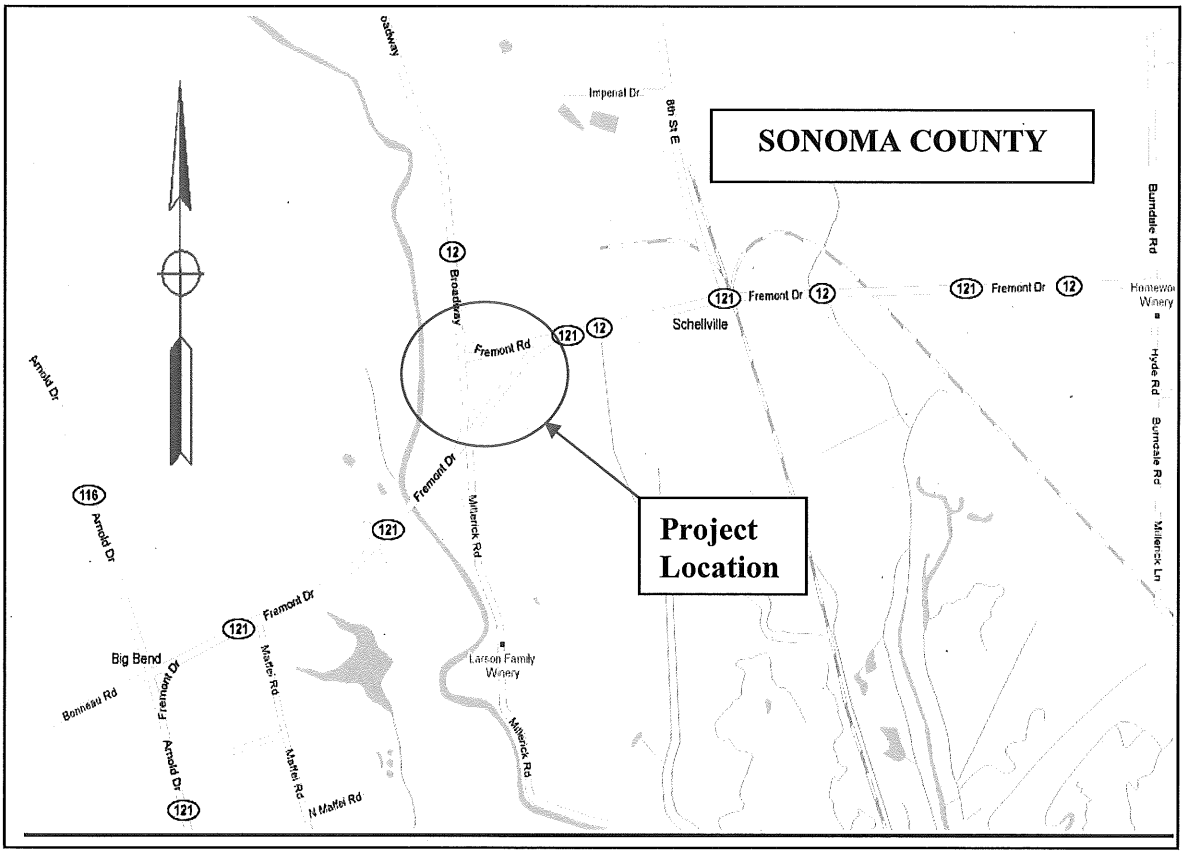
Required Attachments

- Vicinity Map
- Evaluation Documentation Form (EDF)
- Construction Site BMP Consideration Form
- Risk Level Determination Documentation
- Quantities for Construction Site BMPs

Vicinity Map

EA 1A6201

04–Son 12, KP 66.5/66.6 PM 41.3/41.4
04–Son 121, KP 11.9/12.2 PM 7.4/7.6



APPENDIX E

Evaluation Documentation Form

DATE: 11/18/2010

Project ID (or EA): 1A6201

NO.	CRITERIA	YES ✓	NO ✓	SUPPLEMENTAL INFORMATION FOR EVALUATION
1.	Begin Project Evaluation regarding requirement for consideration of Treatment BMPs	✓		See Figure 4-1, Project Evaluation Process for Consideration of Permanent Treatment BMPs. Go to 2
2.	Is this an emergency project?		✓	If **Yes**, go to 10. If **No**, continue to 3.
3.	Have TMDLs or other Pollution Control Requirements been established for surface waters within the project limits? Information provided in the water quality assessment or equivalent document.	✓		If **Yes**, contact the District/Regional NPDES Coordinator to discuss the Department's obligations under the TMDL (if Applicable) or Pollution Control Requirements, go to 9 or 4. VR *(Dist./Reg. SW Coordinator initials)* If **No**, continue to 4.
4.	Is the project located within an area of a local MS4 Permittee?	✓		If **Yes**. *Sonoma County* go to 5. If **No**, document in SWDR go to 5.
5.	Is the project directly or indirectly discharging to surface waters?	✓		If **Yes**, continue to 6. If **No**, go to 10.
6.	Is it a new facility or major reconstruction?	✓		If **Yes**, continue to 8. If **No**, go to 7.
7.	Will there be a change in line/grade or hydraulic capacity?			If **Yes**, continue to 8. If **No**, go to 10.
8.	Does the project result in a net increase of one acre or more of new impervious surface?		✓	If **Yes**, continue to 9. If **No**, go to 10. *(Net Increase New Impervious Surface)*
9.	Project is required to consider approved Treatment BMPs.			See Sections 2.4 and either Section 5.5or 6.5 for BMP Evaluation and Selection Process. Complete Checklist T-1 in this Appendix E.
10.	Project is not required to consider Treatment BMPs. 04R *(Dist./Reg. Design SW Coord. Initials)* *(Project Engineer Initials)* 11/19/10 *(Date)*	✓		Document for Project Files by completing this form, and attaching it to the SWDR.

See Figure 4-1, Project Evaluation Process for Consideration of Permanent Treatment BMPs

DATE: 11/18/2010

Project ID (or EA): 1A6201

Project Evaluation Process for the Consideration of Construction Site BMPs

NO.	CRITERIA	YES ✓	NO ✓	SUPPLEMENTAL INFORMATION
1.	Will construction of the project result in areas of disturbed soil as defined by the Project Planning and Design Guide (PPDG)?	✓		If Yes, Construction Site BMPs for Soil Stabilization (SS) will be required. Complete CS-1, Part 1. Continue to 2. If No, Continue to 3.
2.	Is there a potential for disturbed soil areas within the project to discharge to storm drain inlets, drainage ditches, areas outside the right-of-way, etc?	✓		If Yes, Construction Site BMPs for Sediment Control (SC) will be required. Complete CS-1, Part 2. Continue to 3.
3.	Is there a potential for sediment or construction related materials and wastes to be tracked offsite and deposited on private or public paved roads by construction vehicles and equipment?	✓		If Yes, Construction Site BMPs for Tracking Control (TC) will be required. Complete CS-1, Part 3. Continue to 4.
4.	Is there a potential for wind to transport soil and dust offsite during the period of construction?	✓		If Yes, Construction Site BMPs for Wind Erosion Control (WE) will be required. Complete CS-1, Part 4. Continue to 5.
5.	Is dewatering anticipated or will construction activities occur within or adjacent to a live channel or stream?	✓		If Yes, Construction Site BMPs for Non-Storm Water Management (NS) will be required. Complete CS-1, Part 5. Continue to 6.
6.	Will construction include saw-cutting, grinding, drilling, concrete or mortar mixing, hydro-demolition, blasting, sandblasting, painting, paving, or other activities that produce residues?	✓		If Yes, Construction Site BMPs for Non-Storm Water Management (NS) will be required. Complete CS-1, Parts 5 & 6. Continue to 7.
7.	Are stockpiles of soil, construction related materials, and/or wastes anticipated?	✓		If Yes, Construction Site BMPs for Waste Management and Materials Pollution Control (WM) will be required. Complete CS-1, Part 6. Continue to 8.
8.	Is there a potential for construction related materials and wastes to have direct contact with precipitation; stormwater run-on, or stormwater runoff; be dispersed by wind; be dumped and/or spilled into storm drain systems?	✓		If Yes, Construction Site BMPs for Waste Management and Materials Pollution Control (WM) will be required. Complete CS-1, Part 6. Continue to 9.
9.	End of checklist.	✓	Document for Project Files by completing this form, and attaching it to the SWDR.	

[signature] 11/19/2010

PE to initialize after concurrence with Construction (PS&E only) *Date*

WATER QUALITY INFORMATION HANDOUT

CONTRACT NO. 04-1A6201

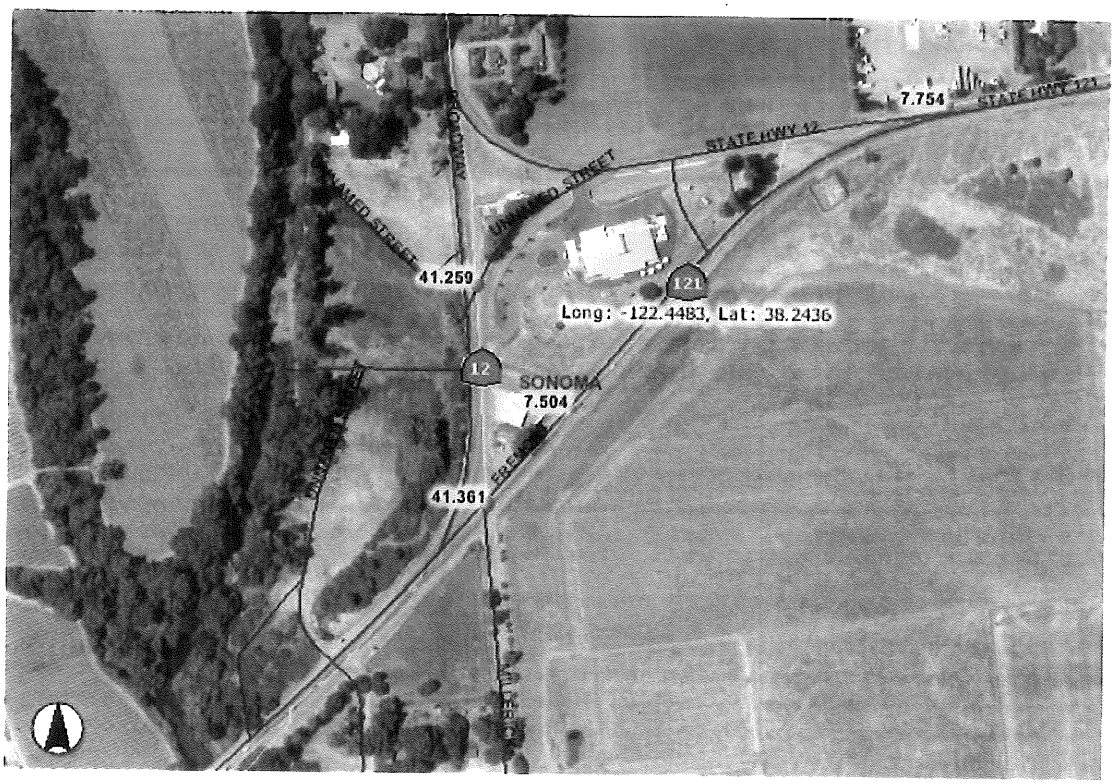
04-Son-12-PM 41.3/41.4; Son-121-PM 7.4/7.6

Realign and Traffic Signal at Junction

California Department of Transportation
District 4
Water Quality Program
111 Grand Avenue
Oakland, California 94612

June 2010

1. Risk Assessment


7.754
STATE HWY 12
STATE HWY 121
UNNAMED STREET
41.259
121
Long: -122.4483, Lat: 38.2436
12
SONOMA
7.504
41.361

U.S. ENVIRONMENTAL PROTECTION AGENCY

National Pollutant Discharge Elimination System (NPDES)

Rainfall Erosivity Factor Calculator for Small Construction Sites

Facility Information

Facility Name: EA 1A6201
Start Date: 05/01/2011
End Date: 11/01/2012
Latitude: 38.2436
Longitutde: -122.4483

Erosivity Index Calculator Results

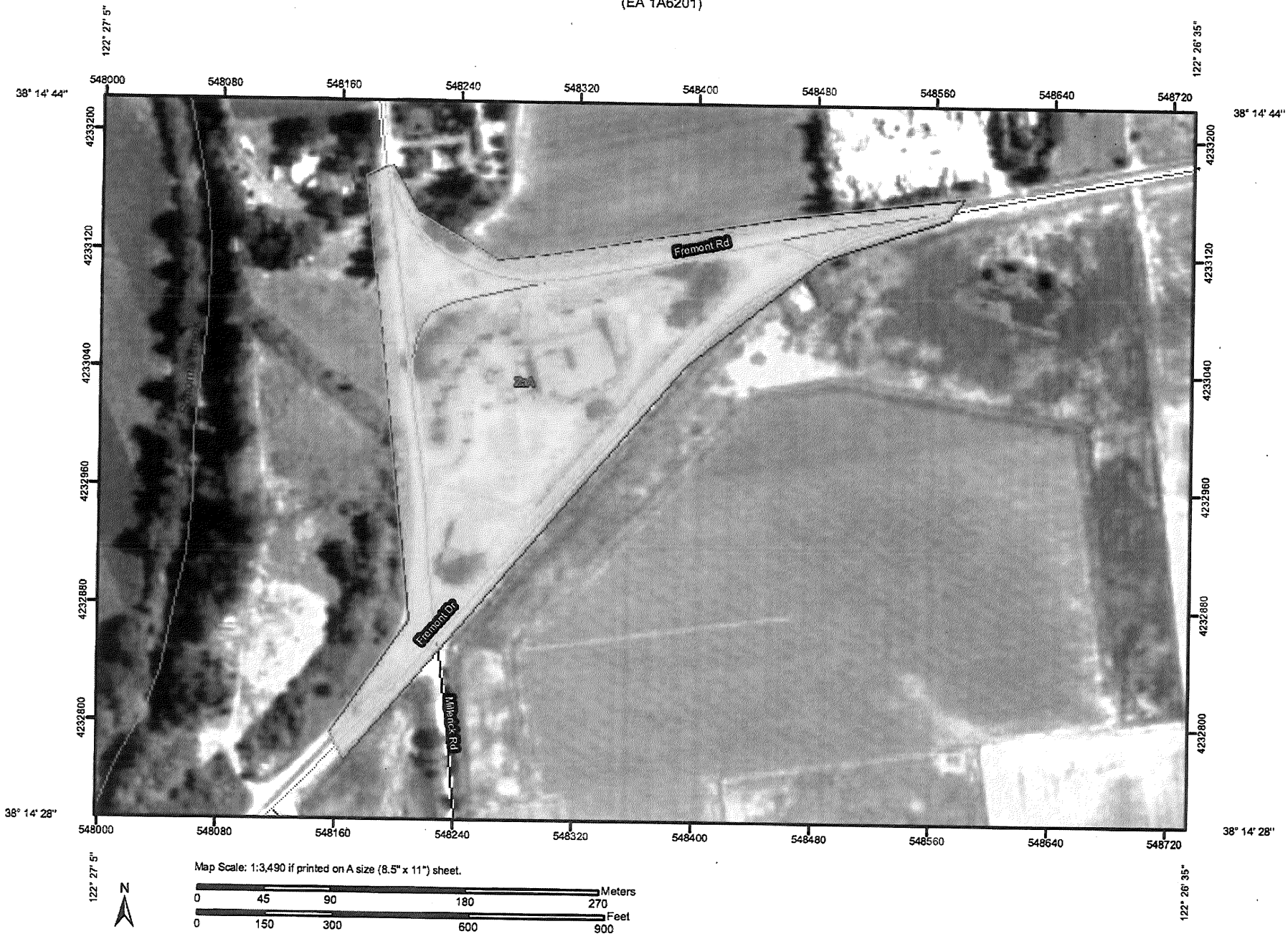
AN EROSIVITY INDEX VALUE OF 76.94 HAS BEEN DETERMINED FOR THE CONST PERIOD OF **05/01/2011 - 11/01/2012.**

A rainfall erosivity factor of 5.0 or greater has been calculated for your site and period of construction. **You do not qualify for a waiver from NPDES permitting requirements.**

Start (

Last updated on August 07, 2009 3:37 PM
URL:http://cfpub.epa.gov/npdes/stormwater/LEW/erosivity_index_result.cfm

R-14-11


122° 27' 5"
122° 26' 35"
38° 14' 44"
38° 14' 28"
548000
548080
548160
548240
548320
548400
548480
548560
548640
548720
4233200
4233120
4233040
4232960
4232880
4232800
Fremont Rd
Fremont Dr
Millanck Rd
2eA
Map Scale: 1:3,490 if printed on A size (8.5" x 11") sheet.
N
0 45 90 180 270 Meters
0 150 300 600 900 Feet

K Factor, Rock Free

K Factor, Rock Free— Summary by Map Unit — Sonoma County, California				
Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
ZaA	ZAMORA SILTY CLAY LOAM, 0 TO 2 PERCENT SLOPES	.37	12.2	100.0%
Totals for Area of Interest			12.2	100.0%

Description

Erosion factor K indicates the susceptibility of a soil to sheet and rill erosion by water. Factor K is one of six factors used in the Universal Soil Loss Equation (USLE) and the Revised Universal Soil Loss Equation (RUSLE) to predict the average annual rate of soil loss by sheet and rill erosion in tons per acre per year. The estimates are based primarily on percentage of silt, sand, and organic matter and on soil structure and saturated hydraulic conductivity (Ksat). Values of K range from 0.02 to 0.69. Other factors being equal, the higher the value, the more susceptible the soil is to sheet and rill erosion by water.

"Erosion factor Kf (rock free)" indicates the erodibility of the fine-earth fraction, or the material less than 2 millimeters in size.

Rating Options

Aggregation Method: Dominant Condition

Component Percent Cutoff: *None Specified*

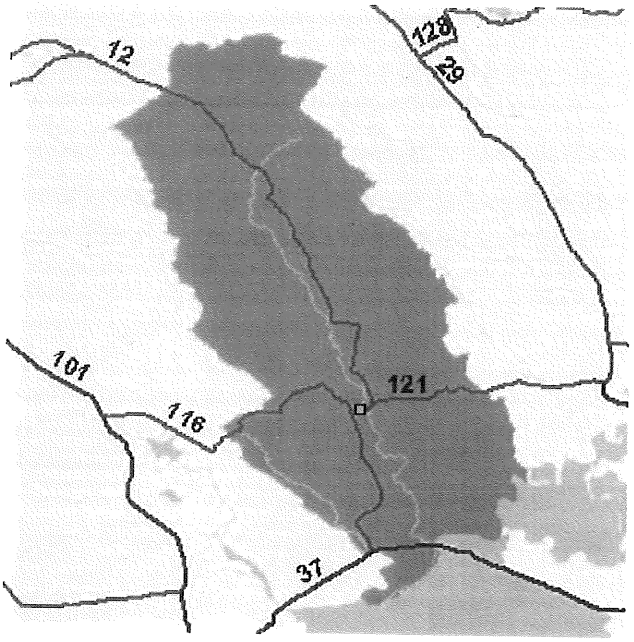
Tie-break Rule: Higher

Layer Options: Surface Layer

Caltrans | SACRAMENTO STATE | OWP OFFICE OF WATER PROGRAMS

Hydrologic Sub-Area 206.40

| HSA Information | TMDLs & 303(d) List | Water Quality Objectives | Caltrans Facilitie Caltrans Loads |



Topographic Map of the area around post mile SON 121 7.000.
Aerial Photograph of the area around post mile SON 121 7.000.
Help

HSA Information

Hydrologic Unit	SAN PABLO
Hydrologic Area	Sonoma Creek
Hydrologic Sub-Area	undefined
Watershed Area (acres)	106593
Average Annual Rainfall (inches)	34.5

Help

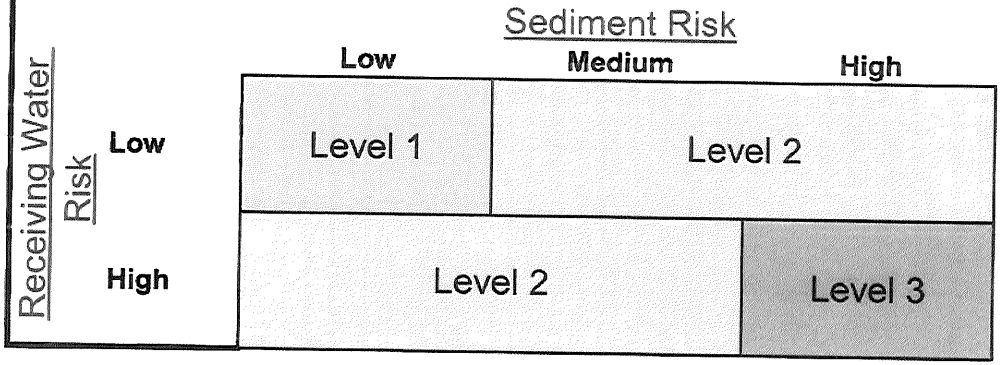
TMDLs & 303(d) Listed Waterbodies (2006 List)

Name	Pollutant	Source	Size	Status	Comments

	A	B	C
1	**Sediment Risk Factor Worksheet**		**Entry**
2	**A) R Factor**		
3	Analyses of data indicated that when factors other than rainfall are held constant, soil loss is directly proportional to a rainfall factor composed of total storm kinetic energy (E) times the maximum 30-min intensity (I30) (Wischmeier and Smith, 1958). The numerical value of R is the average annual sum of EI30 for storm events during a rainfall record of at least 22 years. "Isoerodent" maps were developed based on R values calculated for more than 1000 locations in the Western U.S. Refer to the link below to determine the R factor for the project site.		
4	http://cfpub.epa.gov/npdes/stormwater/LEW/lewCalculator.cfm		
5		**R Factor Value**	76.94
6	**B) K Factor (weighted average, by area, for all site soils)**		
7	The soil-erodibility factor K represents: (1) susceptibility of soil or surface material to erosion, (2) transportability of the sediment, and (3) the amount and rate of runoff given a particular rainfall input, as measured under a standard condition. Fine-textured soils that are high in clay have low K values (about 0.05 to 0.15) because the particles are resistant to detachment. Coarse-textured soils, such as sandy soils, also have low K values (about 0.05 to 0.2) because of high infiltration resulting in low runoff even though these particles are easily detached. Medium-textured soils, such as a silt loam, have moderate K values (about 0.25 to 0.45) because they are moderately susceptible to particle detachment and they produce runoff at moderate rates. Soils having a high silt content are especially susceptible to erosion and have high K values, which can exceed 0.45 and can be as large as 0.65. Silt-size particles are easily detached and tend to crust, producing high rates and large volumes of runoff. Use Site-specific data must be submitted.		
8	Site-specific K factor guidance		
9		**K Factor Value**	0.37
10	**C) LS Factor (weighted average, by area, for all slopes)**		
11	The effect of topography on erosion is accounted for by the LS factor, which combines the effects of a hillslope-length factor, L, and a hillslope-gradient factor, S. Generally speaking, as hillslope length and/or hillslope gradient increase, soil loss increases. As hillslope length increases, total soil loss and soil loss per unit area increase due to the progressive accumulation of runoff in the downslope direction. As the hillslope gradient increases, the velocity and erosivity of runoff increases. Use the LS table located in separate tab of this spreadsheet to determine LS factors. Estimate the weighted LS for the site prior to construction.		
12	LS Table		
13			
14		**LS Factor Value**	0.5
15		**Watershed Erosion Estimate (=RxKxLS) in tons/acre**	14.2339
16		**Site Sediment Risk Factor**	
17		Low Sediment Risk: < 15 tons/acre	
18		Medium Sediment Risk: >=15 and <75 tons/acre	**Low**
19		High Sediment Risk: >= 75 tons/acre	
20			

Receiving Water (RW) Risk Factor Worksheet	Entry	Score
A. Watershed Characteristics	**yes/no**	
A.1. Does the disturbed area discharge (either directly or indirectly) to a **303(d)-listed waterbody impaired by sediment?** For help with impaired waterbodies please check the attached worksheet or visit the link below: 2006 Approved Sediment-impared WBs Worksheet http://www.waterboards.ca.gov/water_issues/programs/tmdl/303d_lists2006_epa.shtml **OR**	**yes**	**High**
A.2. Does the disturbed area discharge to a waterbody with designated beneficial uses of SPAWN & COLD & MIGRATORY? http://www.ice.ucdavis.edu/geowbs/asp/wbguse.asp		

Combined Risk Level Matrix



Project Sediment Risk: Low

Project RW Risk: High

Project Combined Risk: Level 2

2. Information of Construction Site (Temporary) BMPs

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Son	12/121	41.3/41.4 7.4/7.6		16

REGISTERED CIVIL ENGINEER DATE

PLANS APPROVAL DATE

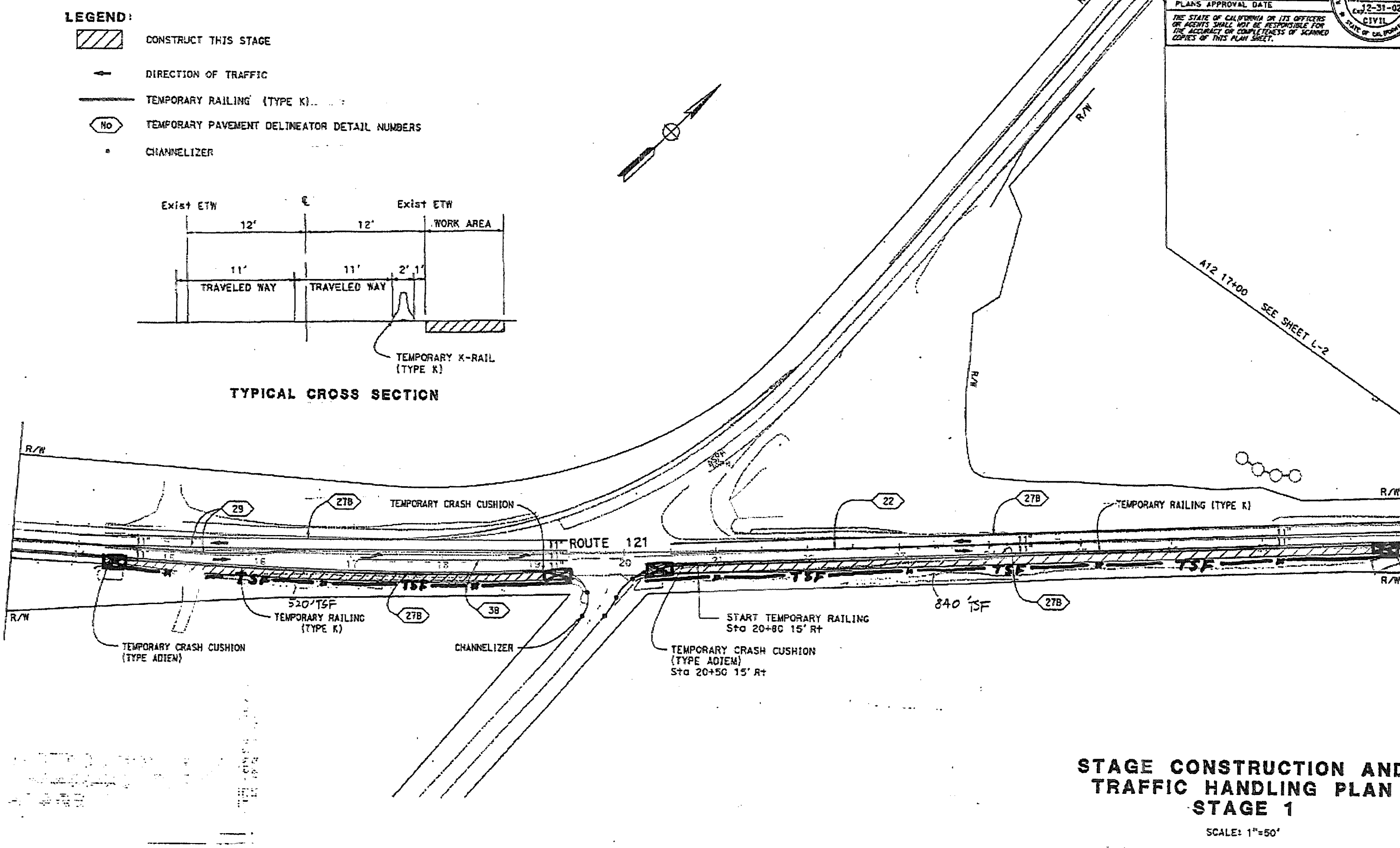
THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

REGISTERED PROFESSIONAL ENGINEER P.Y. Batla No. 52068 Exp 12-31-02 CIVIL STATE OF CALIFORNIA

FOR COMPLETE RIGHT OF WAY DATA, SEE RIGHT OF WAY RECORD MAPS AT DISTRICT OFFICE.

—x— TSF —x— Temp Silt Fence 520 + 840 = 1400 LF

Temp Construction Entrance (4)



STAGE CONSTRUCTION AND TRAFFIC HANDLING PLAN STAGE 1

SCALE: 1"=50'

SC-1

BORDER LAST REVISED 4/11/2008

Concrete 685 CY

RELATIVE BORDER SCALE IS IN INCHES

USERNAME => s134605
DGN FILE => 41c620ro001.dgn

CU EA 1A6201

LAST REVISION 00-00-00 DATE PLOTTED => 01-FEB-2010 TIME PLOTTED => 15:01

FOR COMPLETE RIGHT OF WAY DATA, SEE RIGHT OF WAY RECORD MAPS AT DISTRICT OFFICE.

—x— T&F —x— Temp Silt Fence (800LF)

Temp Check Dam 180' LF check dam

Construction Entrance (3) Exist ETW

Temp Cover (2000 SF)

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
04	Son	12/121	43.3/43.4 7.4/7.6		

REGISTERED CIVIL ENGINEER DATE

P.T. Bottig No. 52068 ex 12-31-09 CIVIL

PLANS APPROVAL DATE

THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF ELECTRONIC COPIES OF THIS PLAN SHEET.

NOTE:

① PROVIDE ACCESS 24 HOURS FOR FIRE STATION PARKING LOT

Var WORK AREA 12' 12' Exist ETW

1' 2' 11' 11' TRAVELED WAY TRAVELED WAY

TEMPORARY K-RAIL (TYPE K)

SECTION A-A NO SCALE

Exist ETW 12' 12' Var WORK AREA Exist ETW

11' 11' 2' 1' TRAVELED WAY TRAVELED WAY

TEMPORARY K-RAIL (TYPE K)

SECTION B-B NO SCALE

END TEMPORARY RAILING Sta 14+50, 10' Rt

TEMPORARY CRASH CUSHION (TYPE ADIEM) Sta 12+95, 30' Lt

BEGIN TEMPORARY RAILING (TYPE K) STA 13+15, 17' LT

TEMPORARY DRIVEWAY SEE NOTE ①

TEMPORARY CRASH CUSHION (TYPE ADIEM) Sta "B" 28+48 2' Lt

800' TSF

TEMPORARY RAILING (TYPE K)

R/W

ROUTE 121

TEMPORARY CRASH CUSHION (ARRAY B11) Sta 19+80, 2' Lt

TEMPORARY RAILING (TYPE K)

END TEMPORARY RAILING Sta "B" 28+18, 2' LT

STAGE CONSTRUCTION AND TRAFFIC HANDLING PLAN STAGE 2

SCALE: 1"=50'

SC-2

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION Caltrans

FUNCTIONAL SUPERVISOR

CALCULATED-DESIGNED BY

CHECKED BY

REVISED BY

DATE REVISED

BORDER LAST REVISED 3/1/2007

RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3

USERNAME => s136666

DGN FILE => 41a620m0002.dgn

CU 04227

EA 1A620

DATE PLOTTED => 04-FEB-2010

TIME PLOTTED => 15:06

01-21-10

01-19-10

FOR COMPLETE RIGHT OF WAY DATA, SEE RIGHT OF WAY RECORD MAPS AT DISTRICT OFFICE.

—x— TSF —x— Temp silt fence (1000' TSF)

☒ Temp Construction Entrance (1)

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
04	Son	12/121	41.3/41.4 7.4/7.6		

REGISTERED CIVIL ENGINEER DATE

D.Y. Sotio
No. 52068
Exp. 12-31-09
CIVIL

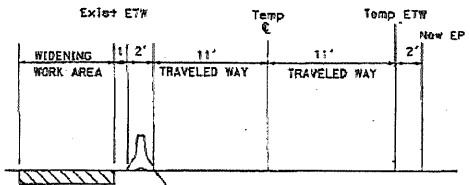
PLANS APPROVAL DATE

THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF ELECTRONIC COPIES OF THIS PLAN SHEET.

REGISTERED PROFESSIONAL ENGINEER

STATE OF CALIFORNIA

SECTION B-B
NO SCALE



SECTION A-A
NO SCALE

STAGE CONSTRUCTION AND TRAFFIC HANDLING PLAN STAGE 3

SCALE: 1"=50'

SC-3

STATE OF CALIFORNIA — DEPARTMENT OF TRANSPORTATION

CALCULATED/DESIGNED BY | CHECKED BY | REVISED BY | DATE REVISED | FUNCTIONAL SUPERVISOR

DATE PLOTTED => 06-02-09
TIME PLOTTED => 15:05

BORDER LAST REVISED 3/1/2007

RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3

USERNAME => e136508
DGN FILE => 41d62Cvp003.dgn

CU 04227

EA 1A6201

Construction Site BMPs Quantities

EA: 1A6201

Items	Quantity
Prepare SWPPP	1
Additional Water Pollution Control	1
Sampling and Analysis	1
Rain Event Action Plan (REAP)	32 Days
Storm Water Annual Report	3
Storm Water Sampling and Analysis Day	15
Temporary Fiber Roll	4000
Temporary Silt Fence	1000
Temporary Hydraulic Mulch (BFM)	5,000 sqyd
Temporary Cover	500 sqyd
Move In/ Move Out (Temporary Erosion Control)	2

California Regional Water Quality Control Board
San Francisco Bay Region

Linda S. Adams
Acting Secretary for
Environmental Protection

1515 Clay Street, Suite 1400, Oakland, California 94612
(510) 622-2300 • Fax (510) 622-2460
http://www.waterboards.ca.gov/sanfranciscobay

Edmund G. Brown, Jr.
Governor

January 6, 2011
CIWQS Place No. 742491 (BT)
401 Database Site No. 02-49-C0297

Sent via electronic mail: No hard copy to follow

California Department of Transportation
Attn: Mr. Eric Schen
Eric_Schen@dot.ca.gov
111 Grand Ave.
Oakland, CA 94612-3717

Subject: Water Quality Certification for the Schellville Signal Installation and Intersection Realignment Project, Sonoma County

Department Project No.: EA 1A620

Dear Mr. Schen:

We have reviewed and hereby issue water quality certification to the California Department of Transportation (Department) for the project referenced above (hereinafter Project). The Department has applied to the U.S. Army Corps of Engineers (Corps) for Nationwide Permit No. 14, *Linear Transportation Projects*, pursuant to Section 404 of the Clean Water Act (33 U.S.C. 1344). As such, the Department has applied to the Water Board for a Clean Water Act Section 401 water quality certification that the Project will not violate State water quality standards.

Project: The Project is located at the junction of State Routes (SR) 12 and 121 near the community of Schellville in eastern Sonoma County, approximately a quarter-mile east of Sonoma Creek. The Project area is a nine-acre triangular piece of land in the floodplain of Sonoma Creek and is enclosed by Fremont Road to the north, SR 121 to the southeast, and SR 12 to the west. Open roadside ditches and wetlands extend along the perimeter of the Project area. The Project area drains south to the adjacent open floodplain area, which then drains south to a series of sloughs, eventually connecting with Sonoma Creek approximately 1.25 miles south of the Project site.

The Department proposes to: realign eastbound SR12 at its junction with SR 121; add left turn lanes at eastbound SR 12 and northbound SR 121 approaches; demolition of a portion of the SR 12 roadbed; construct shoulders at the SR 12/121 junction; and construct an approximately 0.28 acre (550 linear feet) roadside drainage ditch. The drainage ditch will be lined with cellular concrete blocks to prevent erosion that is recurrent in the existing drainage ditches.

Impacts: Project implementation will result in the permanent fill of approximately 0.060 acres (370 linear feet) of jurisdictional seasonal freshwater wetlands and 0.030 acres (83 linear feet) of jurisdictional waters due to roadway realignment and shoulder widening. Approximately 0.020 acres (60 linear feet) of jurisdictional waters will be temporarily impacted due to equipment staging and construction access. The jurisdictional wetlands are roadside ditches that possess soil, hydrology, and plant wetland indicators, whereas the jurisdictional waters are roadside ditches not possessing all three indicators.

Mitigation: To mitigate for the permanent fill of approximately 0.060 acres (370 linear feet) of jurisdictional seasonal freshwater wetlands, and 0.030 acres (83 linear feet) of jurisdictional waters, the Department has purchased 0.1 acres of seasonal wetland mitigation credit at the Burdell Ranch Wetland Conservation Bank.

Because the Project involves an approximately 0.012 acre decrease in impervious area and involves no re-worked existing impervious area, stormwater treatment is not required.

CEQA Compliance: In October 2007, the Department found that the project was categorically exempt from CEQA pursuant to 14 CCR § 15305, § 15306, § 15311, and § 15320.

Certification: I hereby issue an order certifying that any discharge from the referenced project will comply with the applicable provisions of sections 301 (Effluent Limitations), 302 (Water Quality Related Effluent Limitations), 303 (Water Quality Standards and Implementation Plans), 306 (National Standards of Performance), and 307 (Toxic and Pretreatment Effluent Standards) of the Clean Water Act, and with other applicable requirements of State law. This discharge is also regulated under State Water Resources Control Board Order No. 2003 - 0017 – DWQ, "General Waste Discharge Requirements for Dredge and Fill Discharges That Have Received State Water Quality Certification" which requires compliance with all conditions of this Water Quality Certification. The following conditions are associated with this certification:

1. The Department shall adhere to the Standard conditions imposed by Nationwide Permit No. 14, issued to the Department by the Corps;

2. The Project shall be constructed in conformance with the Project Description described in this certification and certification application materials. Any change in the Project may require modification to the certification and/or be subject to the acceptance of the Water Board Executive Officer, and shall be reported to the Water Board;

3. Erosion control measures shall be utilized throughout all phases of construction where sediment runoff from disturbed areas threatens to enter waters of the State, regardless of date. At no time shall silt-laden runoff be allowed to enter waters of the State;

4. Except as expressly allowed in this Certification, no equipment shall be operated in areas of flowing or standing water; no fueling, cleaning or maintenance of vehicles or equipment

shall take place within jurisdictional waters or within any areas where an accidental discharge to waters of the State may occur;

5. The Department shall submit two sets of photographs documenting the constructed ditch to the Water Board: Photographs of the ditch upon completion, to be submitted no later than three weeks from Project completion; and photographs of the vegetated ditch, to be submitted no later than three months from Project completion;

6. All temporarily disturbed areas shall be restored to pre-construction or enhanced conditions, using only native plant species, immediately following cessation of construction activities in those areas;

7. Except as expressly allowed in this Certification, the discharge, or creation of the potential for discharge, to waters of the State of any construction wastes and/or soil materials including cement, fresh concrete, or washings thereof, silts, clay, sand, oil or petroleum products and other organic materials to waters of the State is prohibited;

8. This Certification does not allow for the take, or incidental take, of any special status species. The Department shall use the appropriate protocols, as approved by the California Department of Fish and Game and the U.S. Fish and Wildlife Service, to ensure that Project activities do not impact the Beneficial Use of the Preservation of Rare and Endangered Species;

9. Except as expressly allowed in this Certification, no equipment shall be operated in areas of flowing or standing water. No fueling, cleaning or maintenance of vehicles or equipment shall take place within jurisdictional waters or within any areas where an accidental discharge to waters of the State may occur;

10. The Department shall maintain a copy of this water quality certification at the Project site so as to be available at all times to site operating personnel. It is the responsibility of the Department to assure that all personnel (employees, contractors, and subcontractors) are adequately informed and trained regarding the conditions of this certification;

11. This certification action is subject to modification or revocation upon administrative or judicial review, including review and amendment pursuant to Section 13330 of the California Water Code (CWC) and Section 3867 of Title 23 of the California Code of Regulations(23 CCR);

12. This certification action does not apply to any discharge from any activity involving a hydroelectric facility requiring a Federal Energy Regulatory Commission (FERC) license or an amendment to a FERC license, unless the pertinent certification application was filed pursuant to California Code of Regulations (CCR) Title 23, Subsection 3855(b) and that

application specifically identified that a FERC license or amendment to a FERC license for a hydroelectric facility was being sought; and,

13. Certification is conditioned upon total payment of the full fee required in State regulations (23 CCR Section 3833). Water Board staff received full payment of $888.00 on November 4, 2010.

We anticipate your cooperation in implementing these conditions. However, please be advised that any violation of water quality certification conditions is a violation of State law and subject to administrative civil liability pursuant to California Water Code (CWC) section 13350. Failure to respond, inadequate response, late response, or failure to meet any condition of this certification may subject you to civil liability imposed by the Water Board to a maximum of $5,000 per day per violation or $10 for each gallon of waste discharged in violation of this certification.

Condition 5 is a requirement for information or reports. Any requirement for a report made as a condition to this action is a formal requirement pursuant to CWC section 13267, and failure or refusal to provide, or falsification of such required report is subject to civil liability as described in CWC section 13268.

We anticipate no further action on this request. Should new information come to our attention that indicates a water quality problem with this project, the Water Board may issue Waste Discharge Requirements pursuant to 23 CCR Section 3857.

If you have any question, please contact Brendan Thompson at (510) 622-2506, or via e-mail to BThompson@waterboards.ca.gov.

Sincerely,

Shin-Roei Lee acting for

Bruce H. Wolfe
Executive Officer

cc (via e-mail): Mr. Bill Orme SWRCB-DWQ
Mr. Hal Durio, Regulatory Branch, USACE
Ms. Jane Hicks, Regulatory Branch, USACE
Ms. Holly Costa, Regulatory Branch, USACE
Ms. Laurie Monarres, USACE
Mr. Dale Bowyer, Water Board
Mr. Cyrus Vafai, Caltrans
Mr. Hardeep Takhar, Caltrans
Mr. Jason Brush, USEPA
Ms. Andrea Meier, USACE